



How to perform IVUS guided wiring

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Concept of IVUS-guided wiring at CTO

1. IVUS-guided wiring at CTO proximal cap

Feasible and can be a first choice

- Presence a blunt stump (Stumpless)
- and
- Presence of a side branch enough to advance IVUS catheter

2. IVUS-guided rewiring

Requiring experience and skill

- Last alternatives in antegrade approach
- IVUS guided- reverse CART technique in retrograde approach





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Basics of IVUS-guided rewiring

1. Understanding plaque distribution on angiography

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Linkage between angio and IVUS findings is needed.





Basics of IVUS-guided rewiring

1. Understanding plaque distribution on angiography

**IVUS guided rewiring is always performed on angio screen...
Linkage between angio and IVUS findings is needed.**

2. How can we link these findings???

Angiographic view is 2D, however, coronary arteries are 3D.

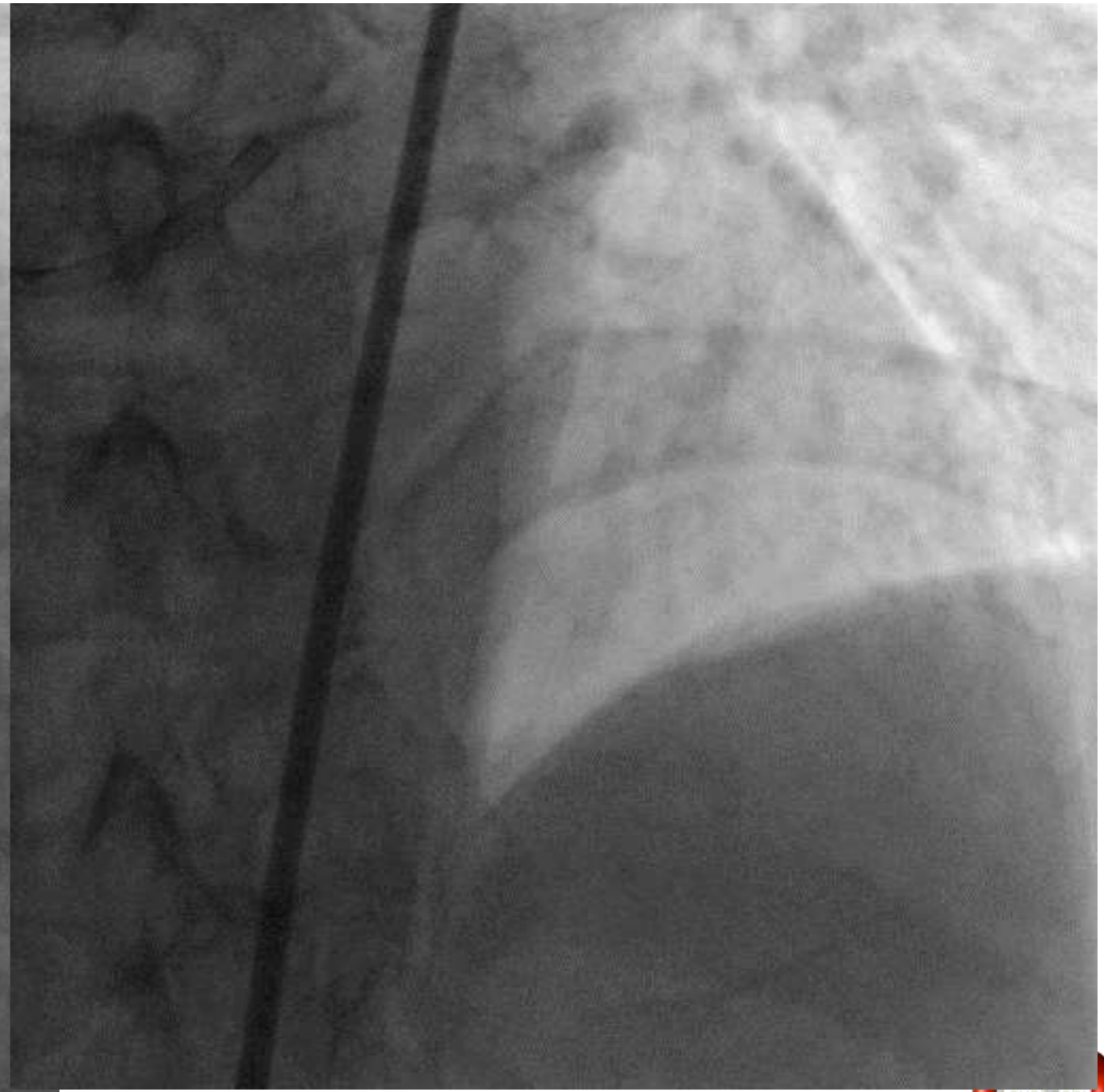
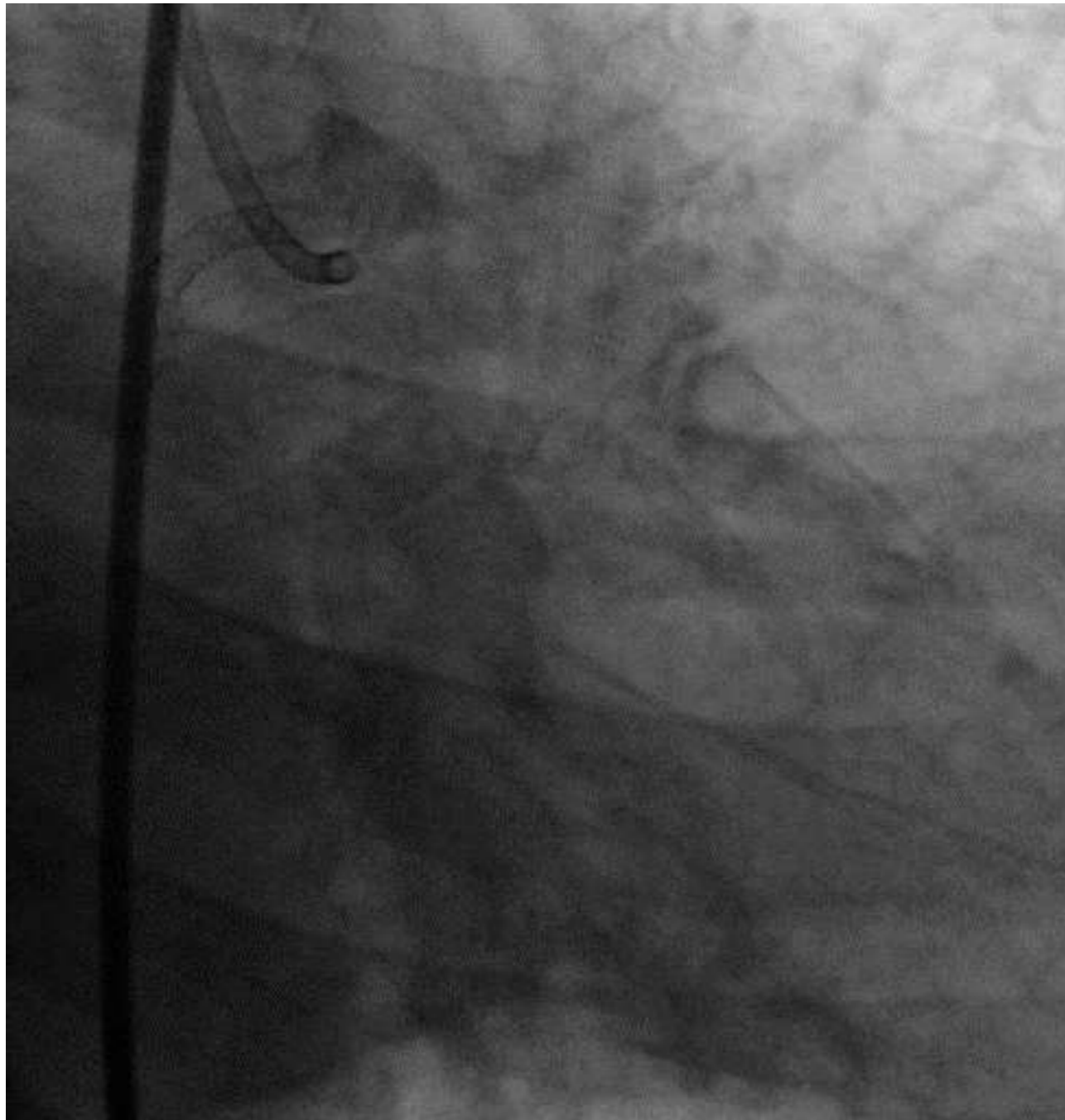




1. Branch as a landmark

RAO30 CAU30

CRA30

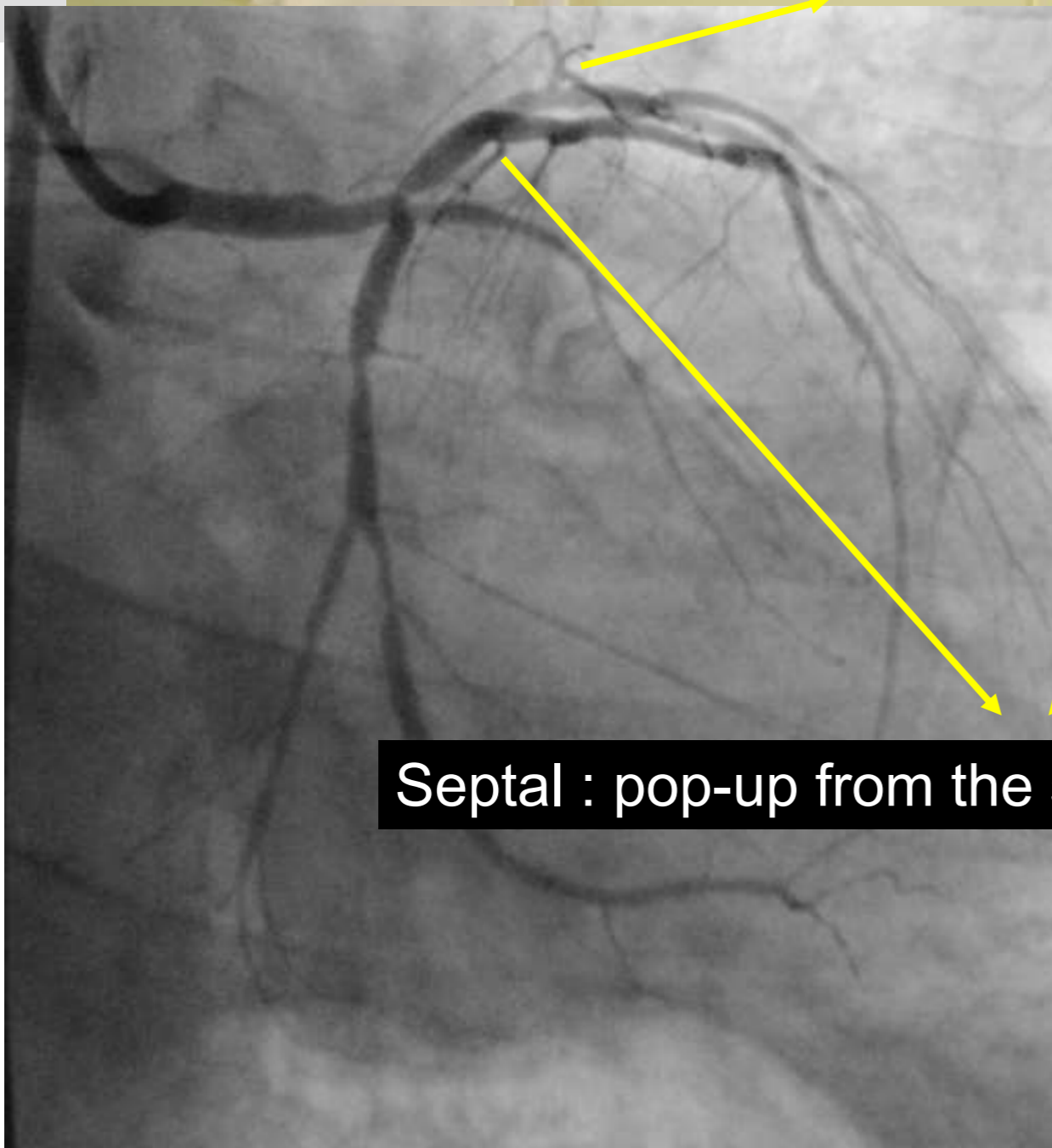




Linkage angio with IVUS in RAO CAU view



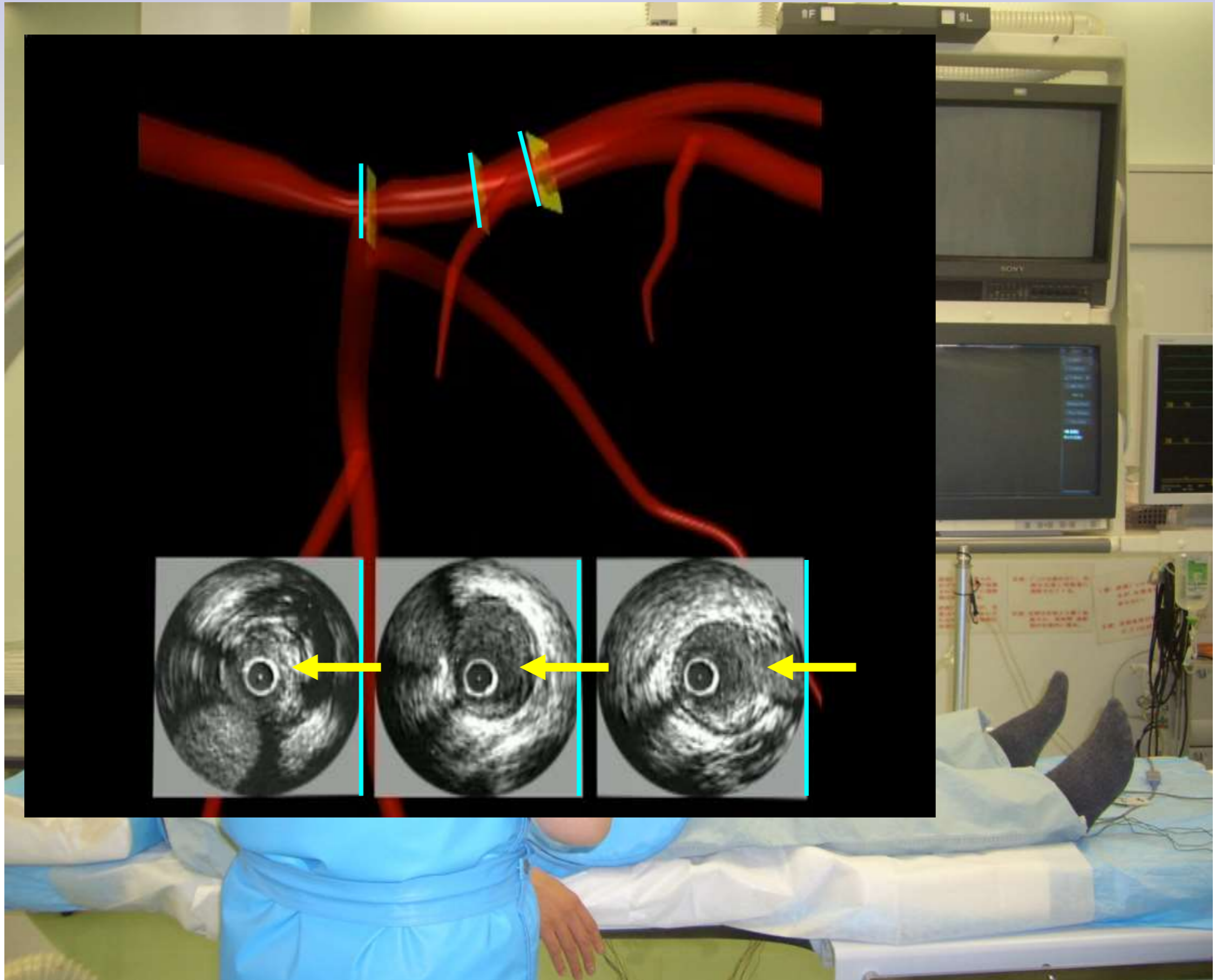
Diagonal : go into the back

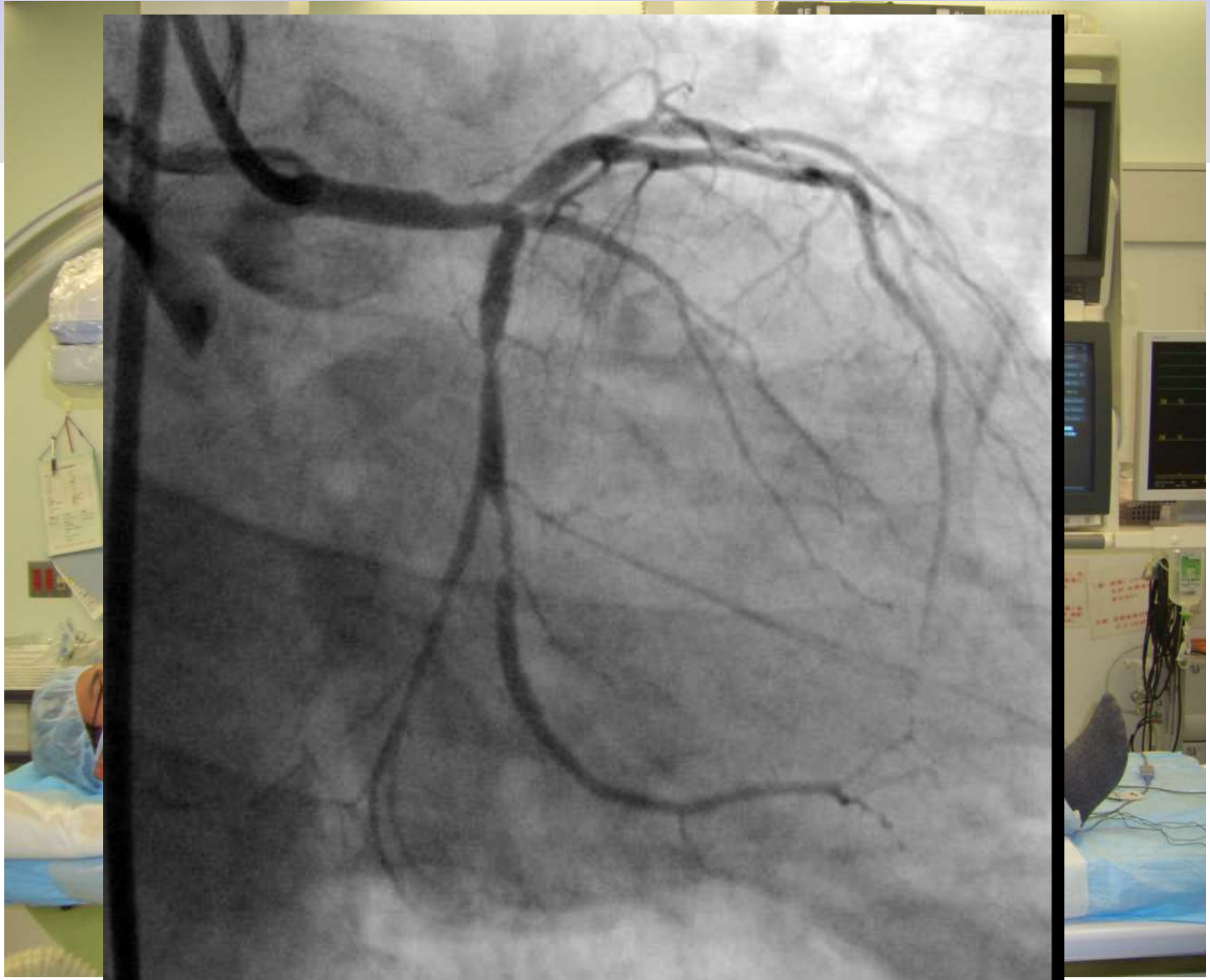


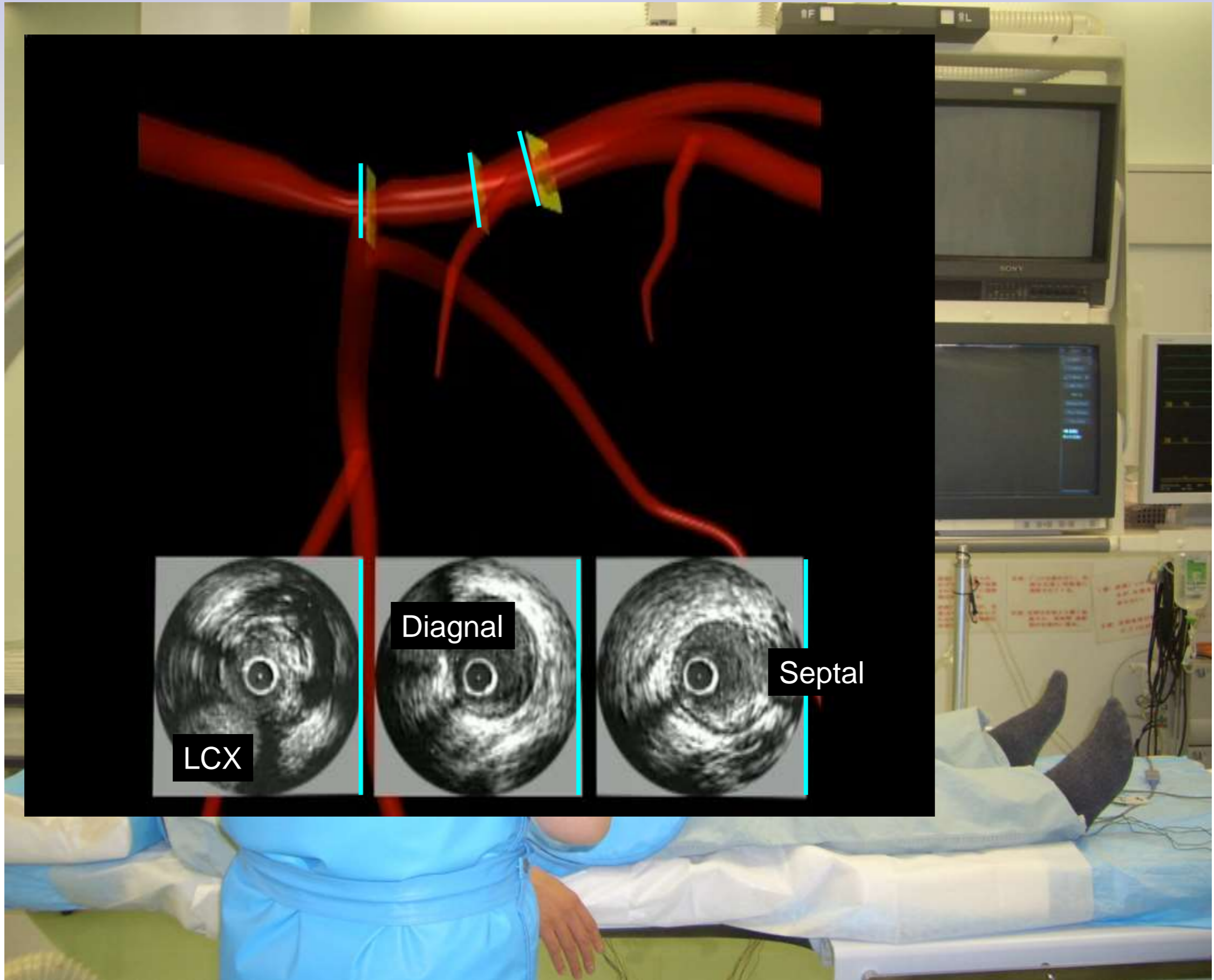
Septal : pop-up from the screen

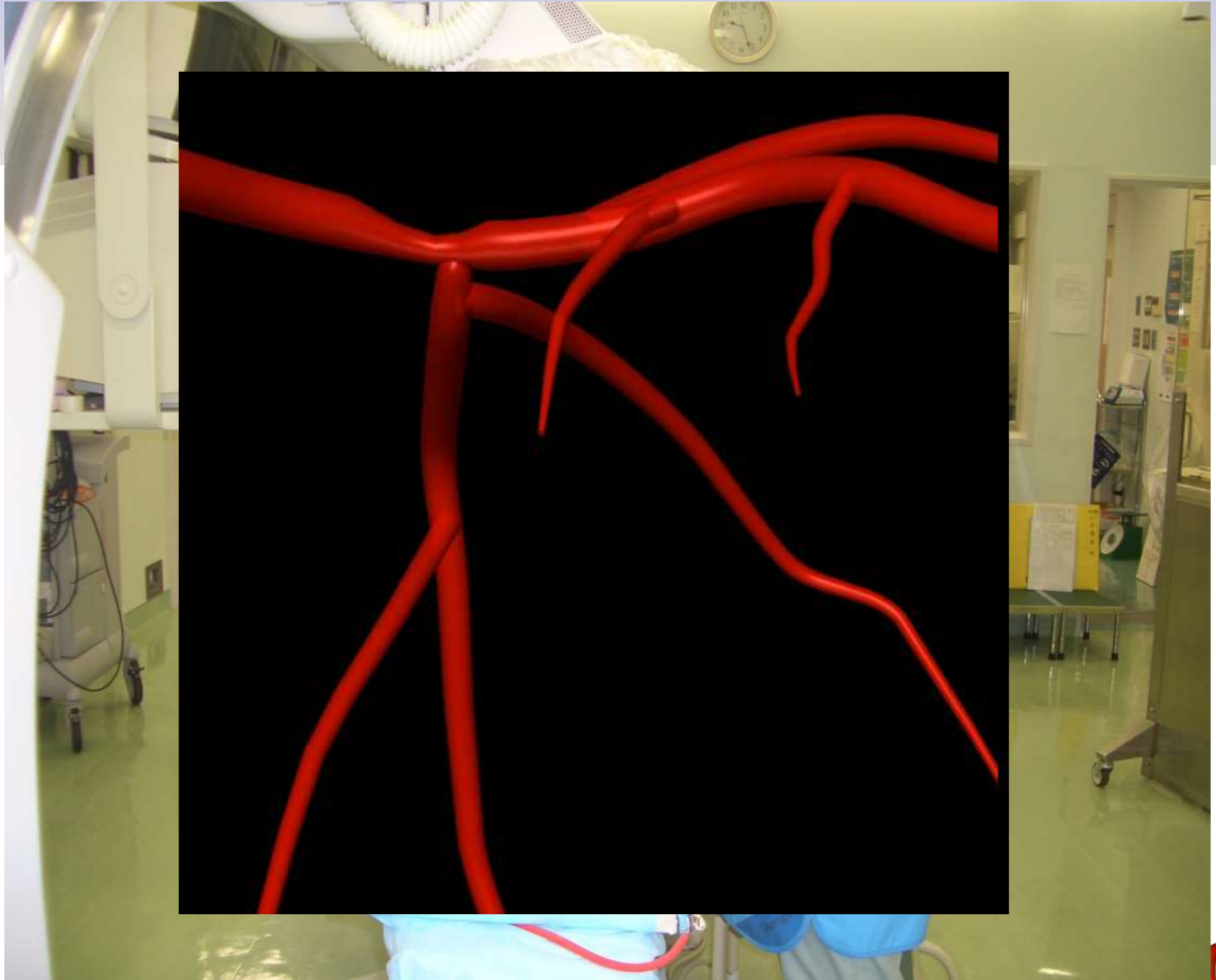










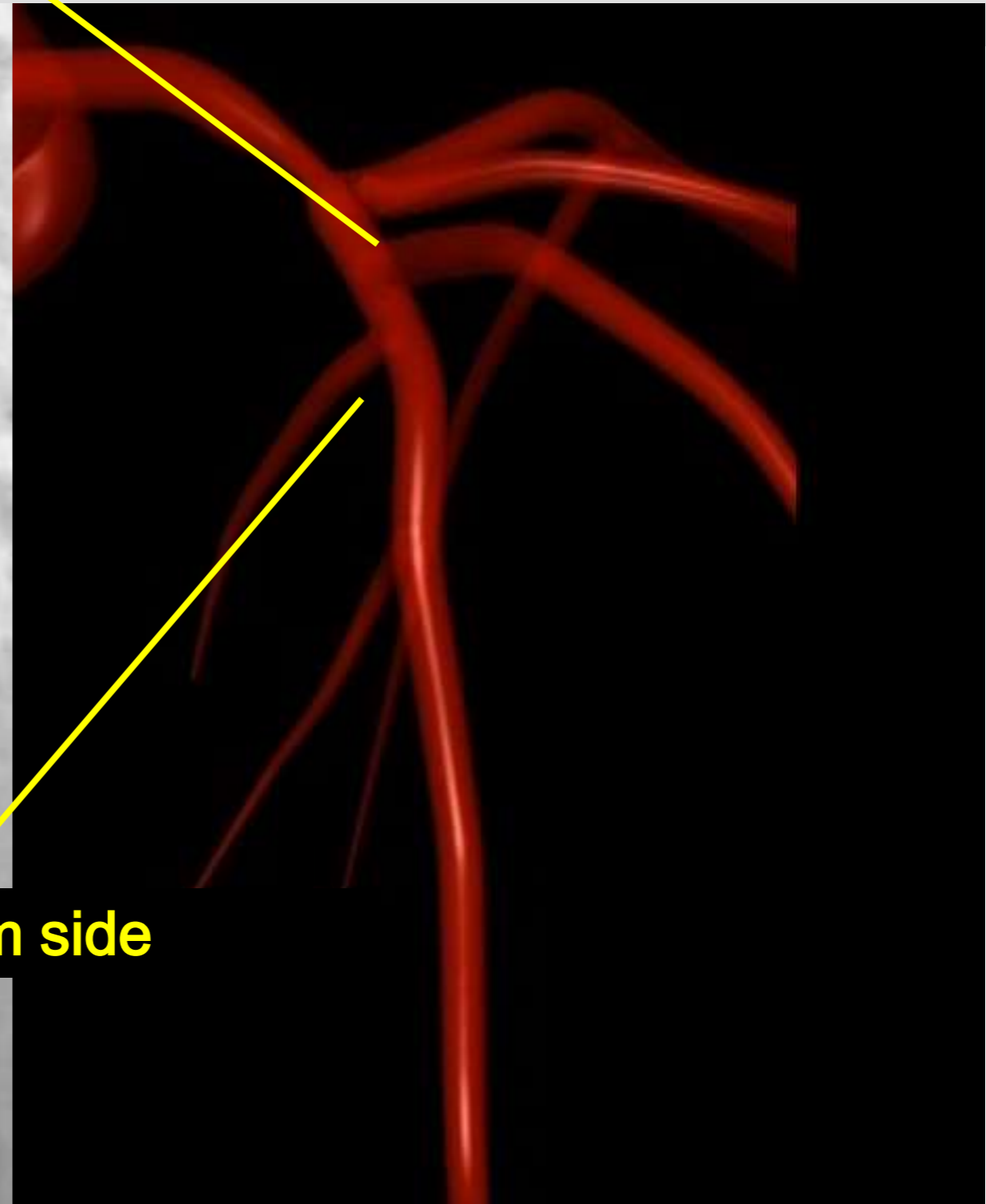
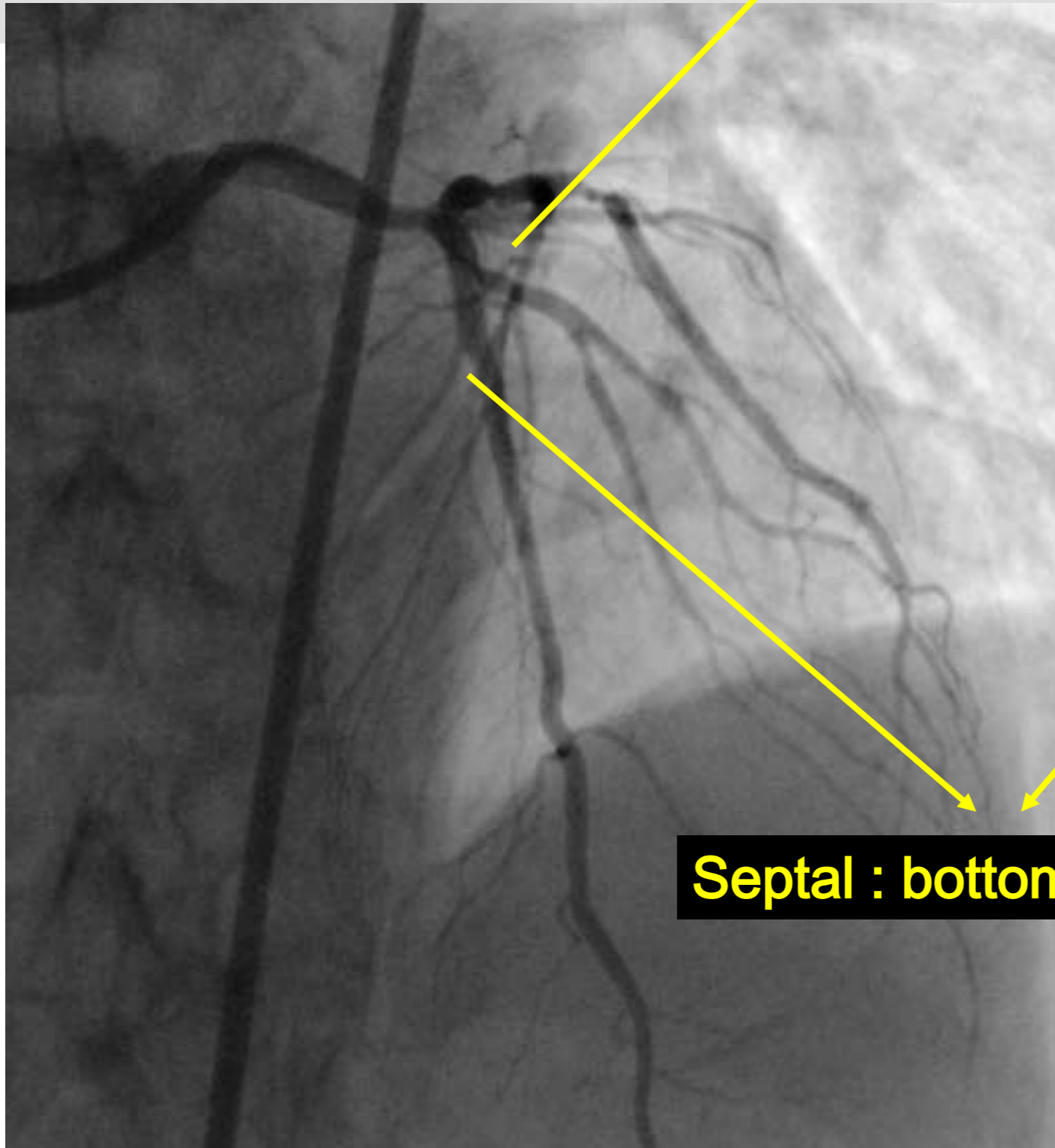




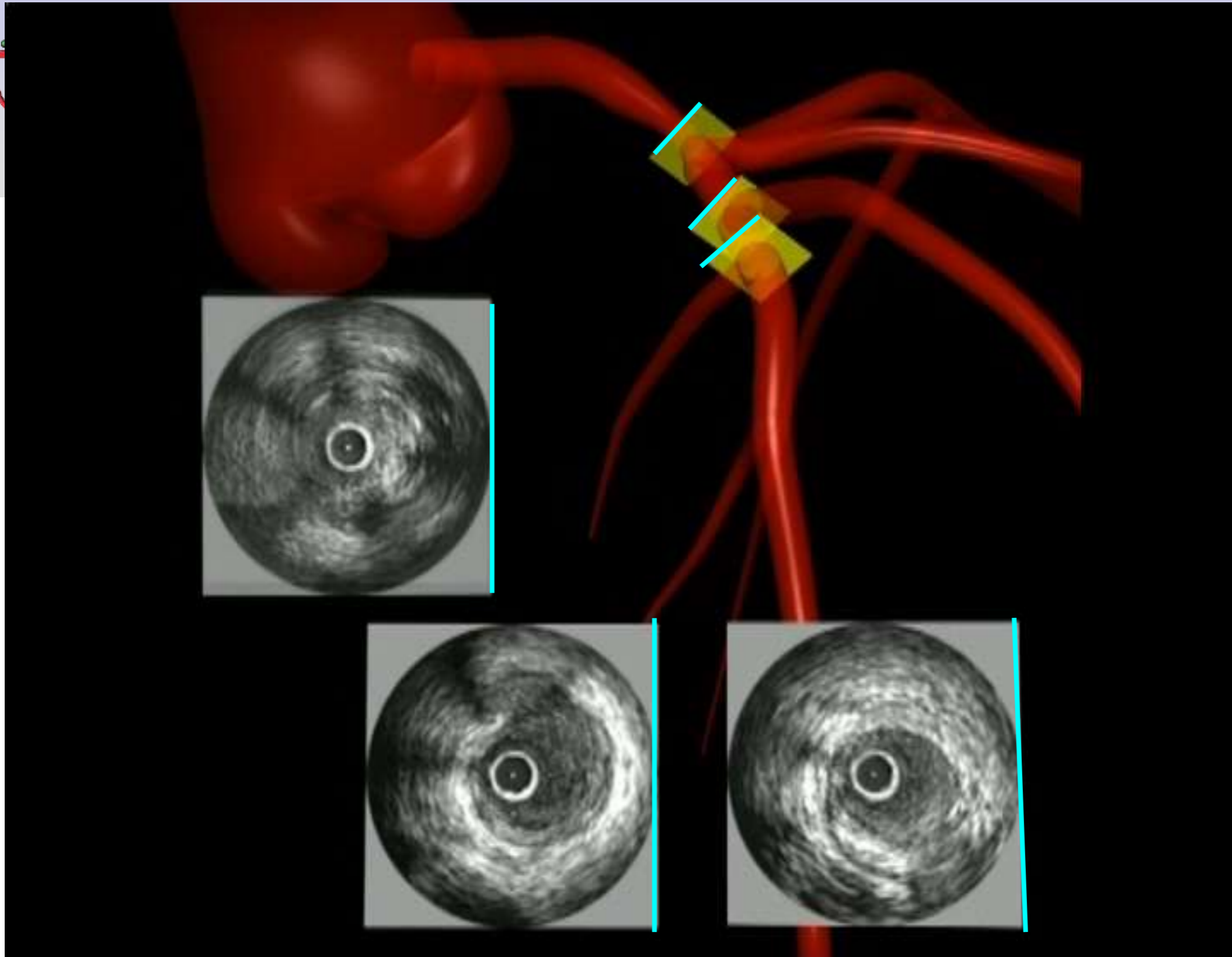
Linkage angio with IVUS in CRA view

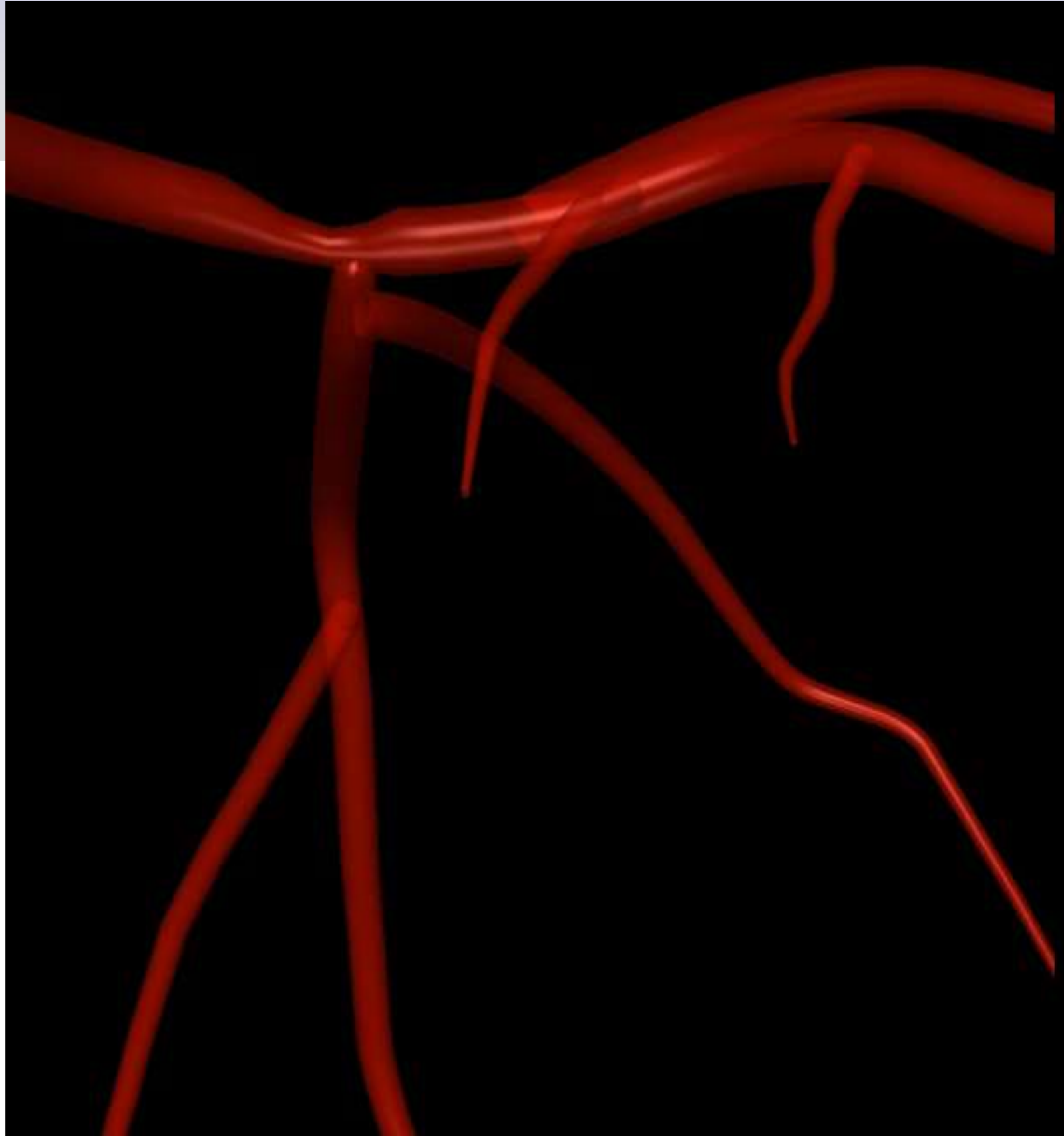


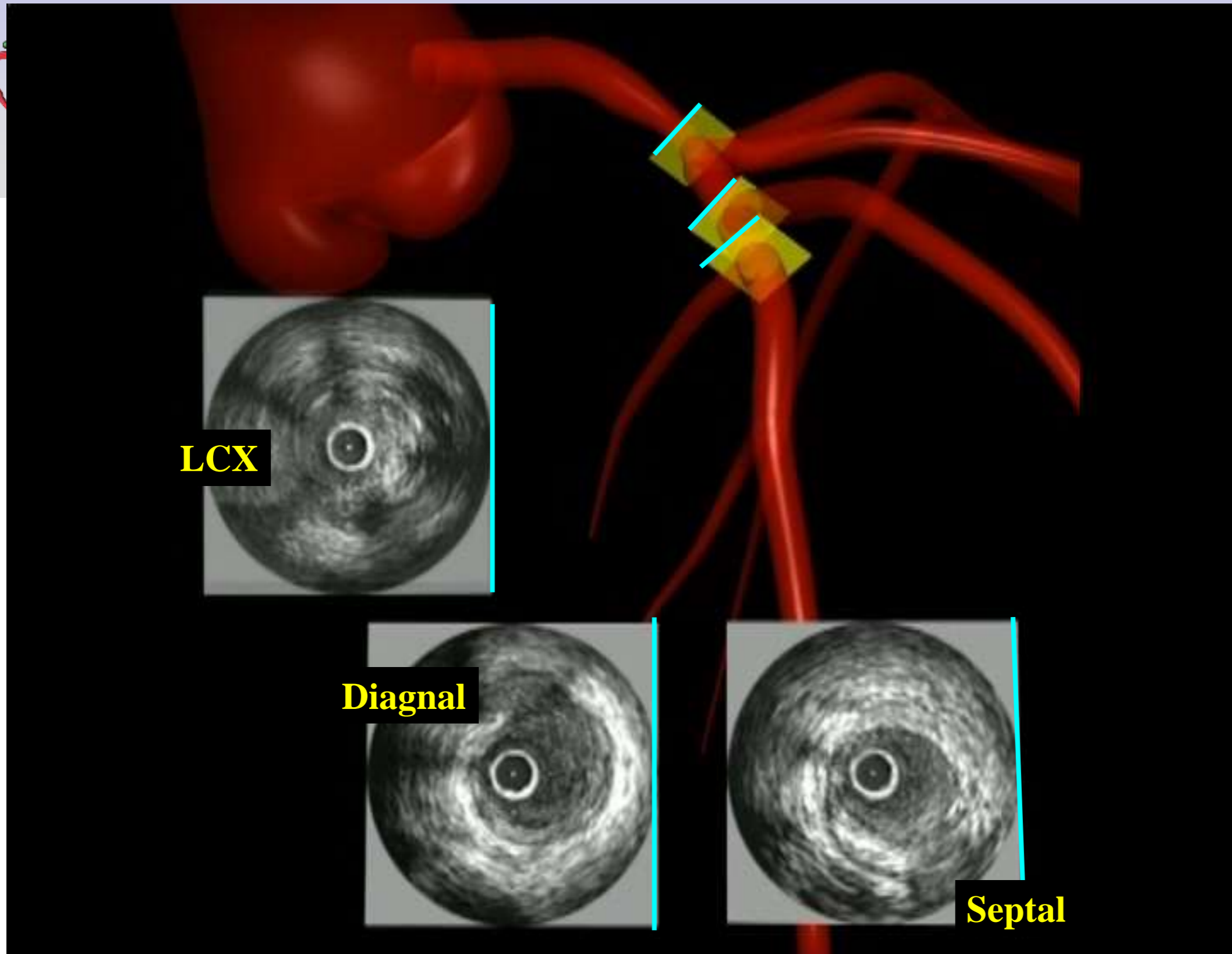
Diagonal : upper side



Septal : bottom side







LCX

Diagonal

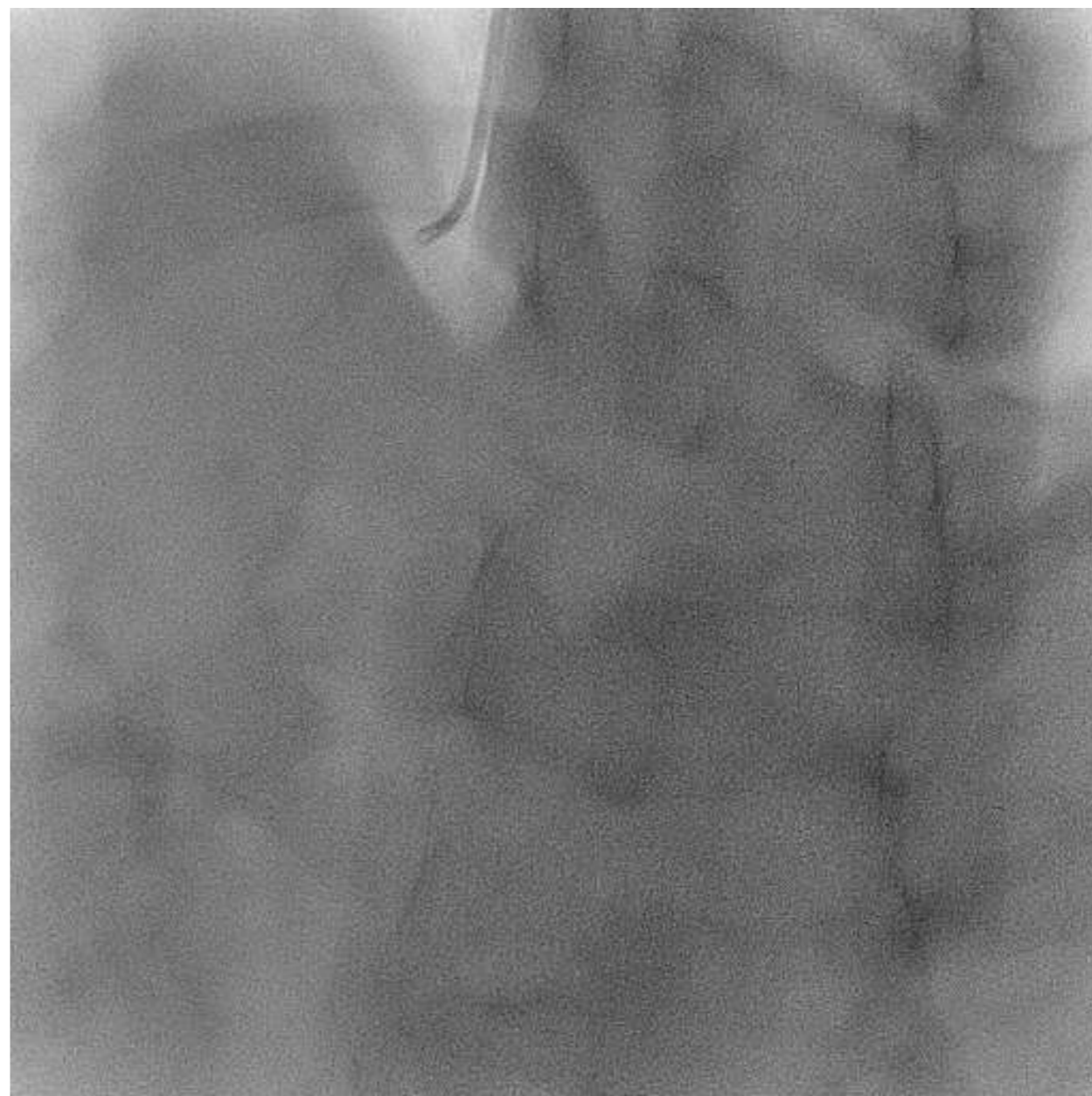
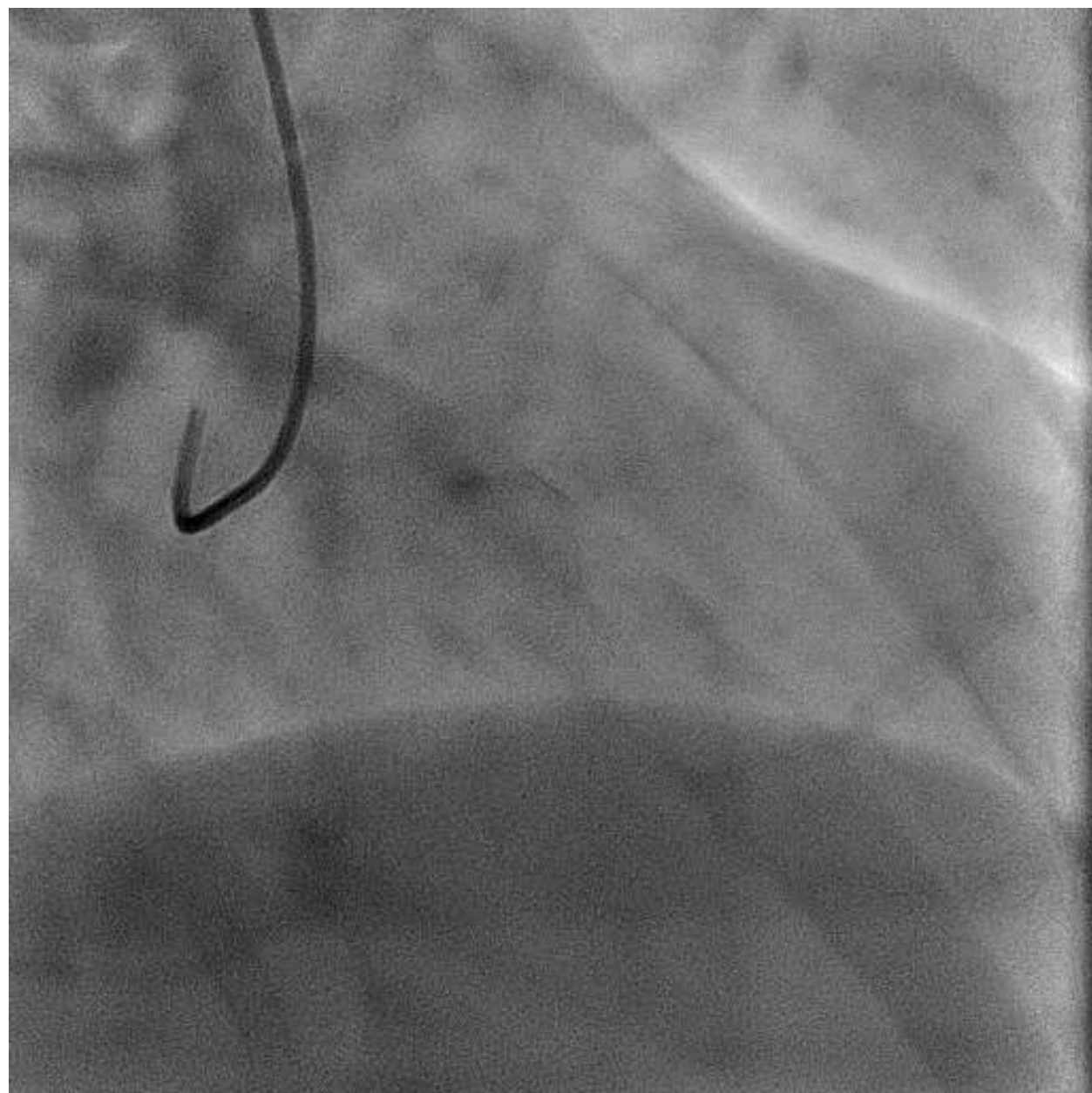
Septal





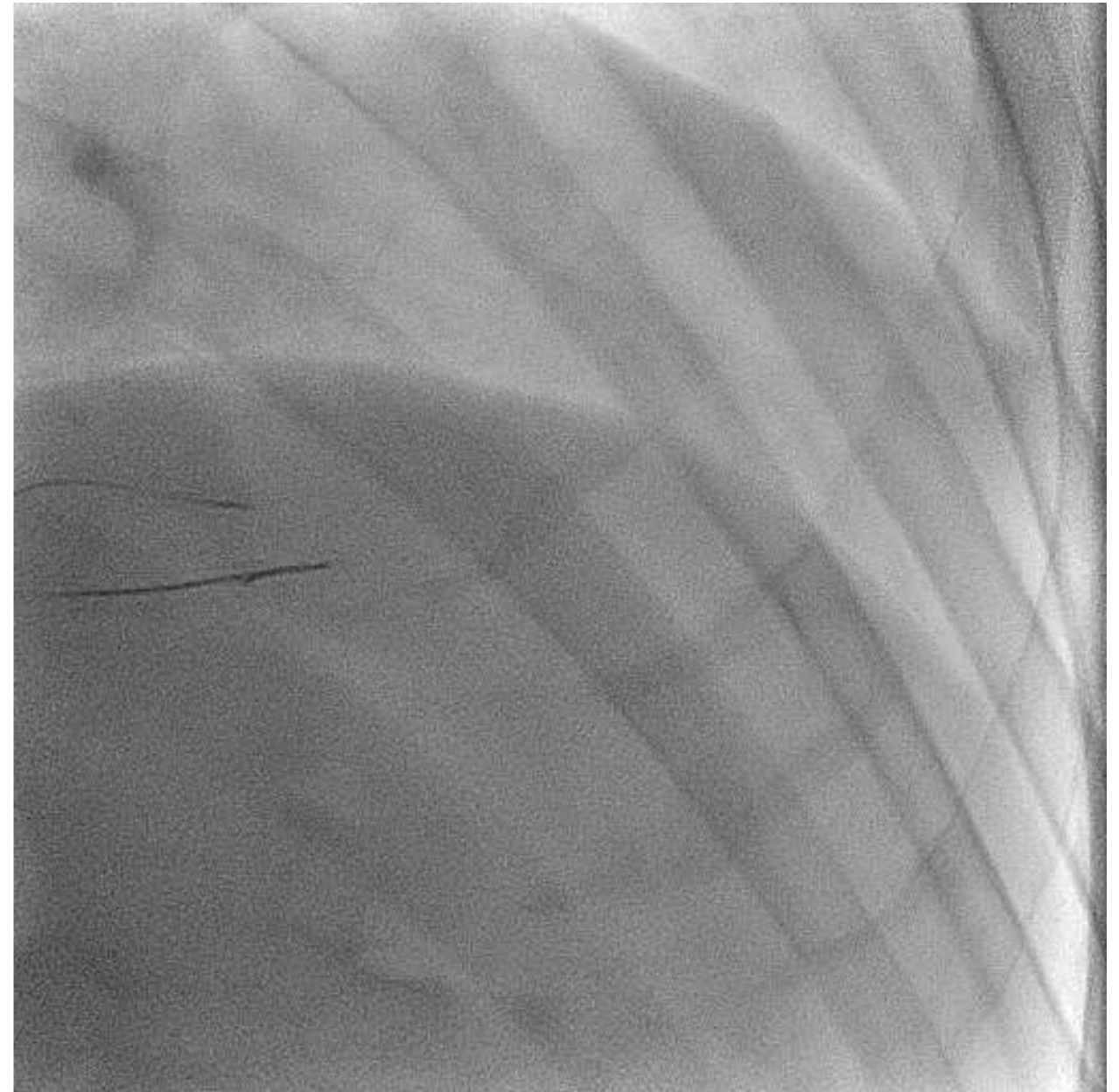
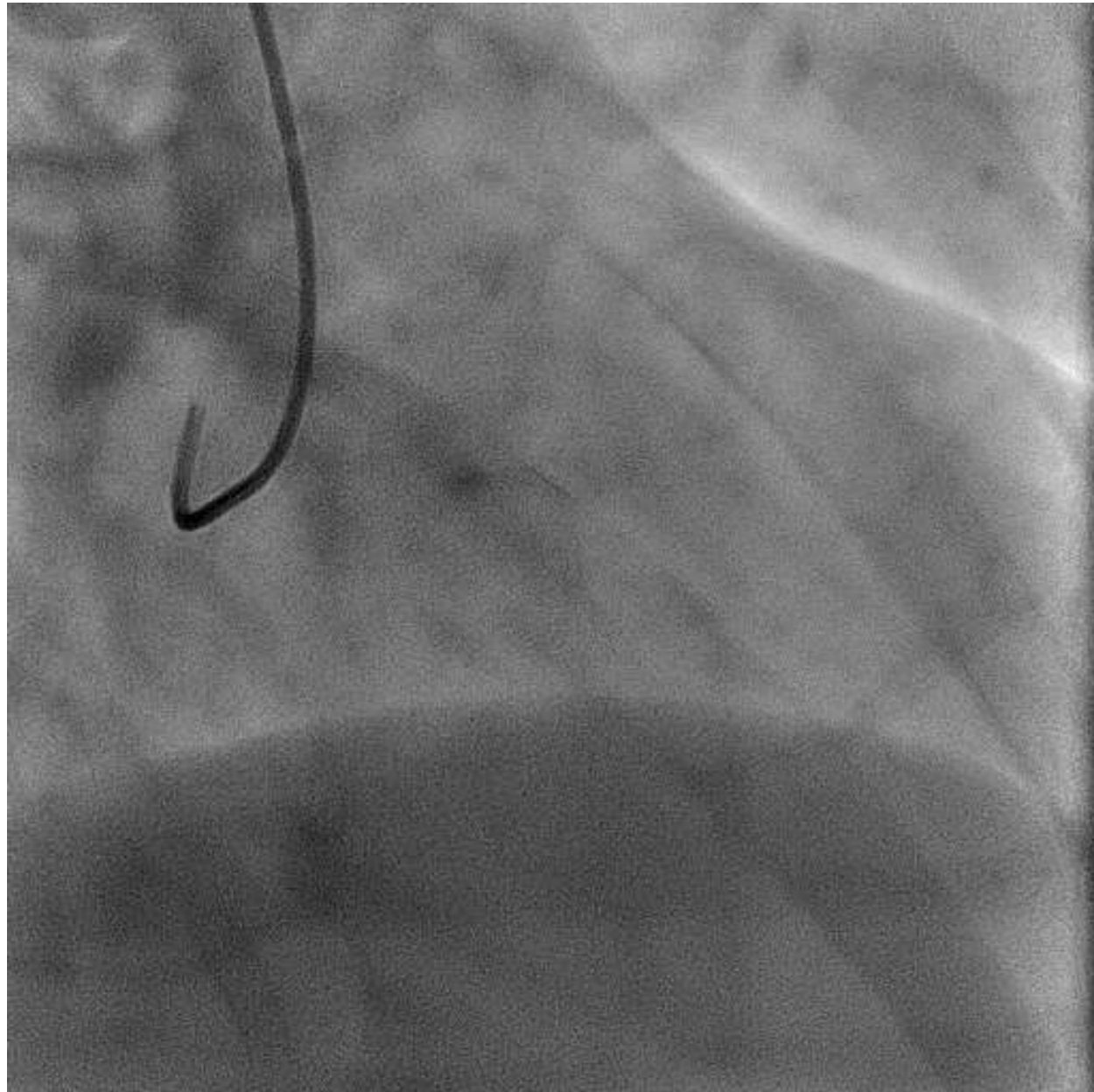


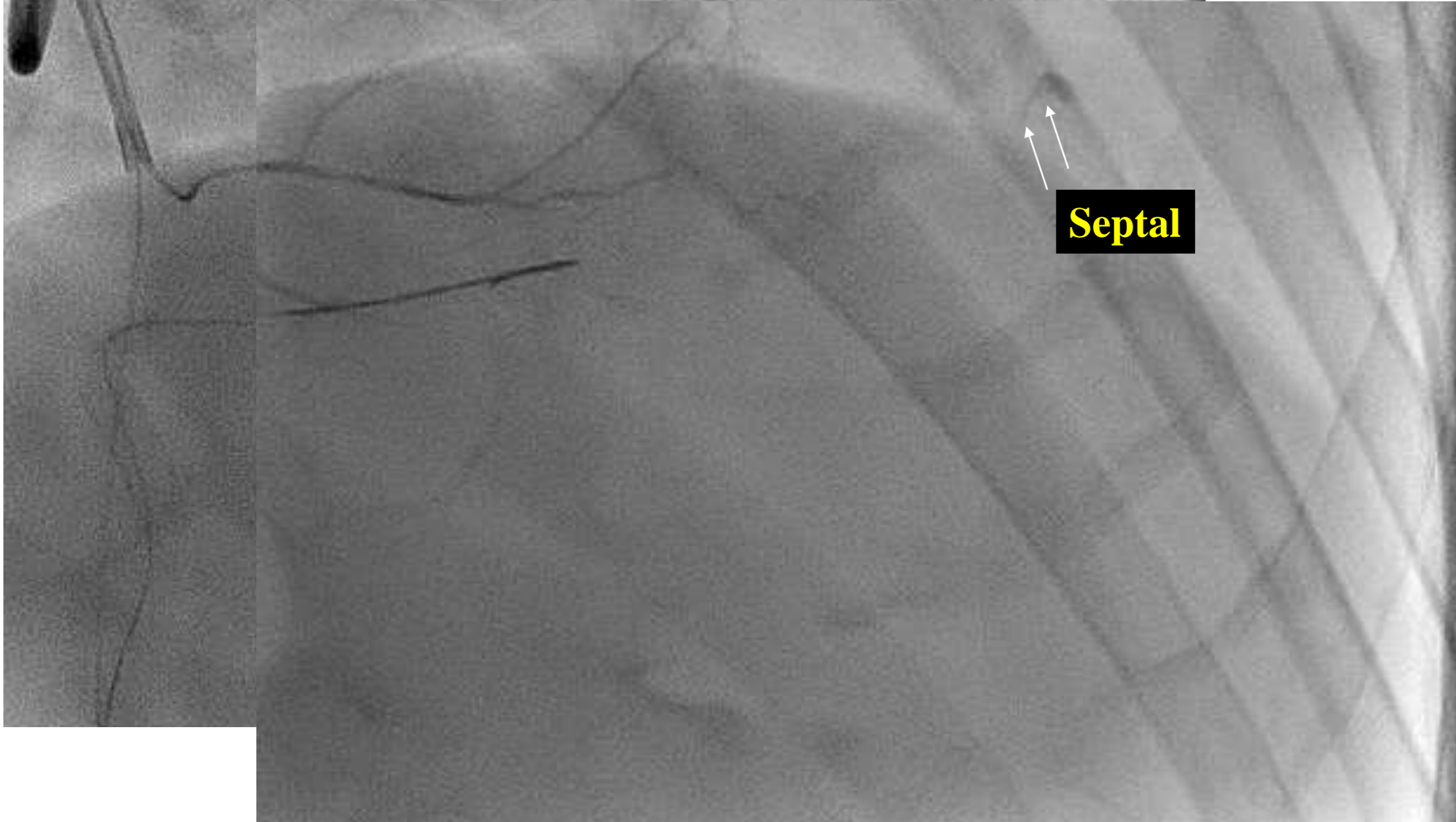
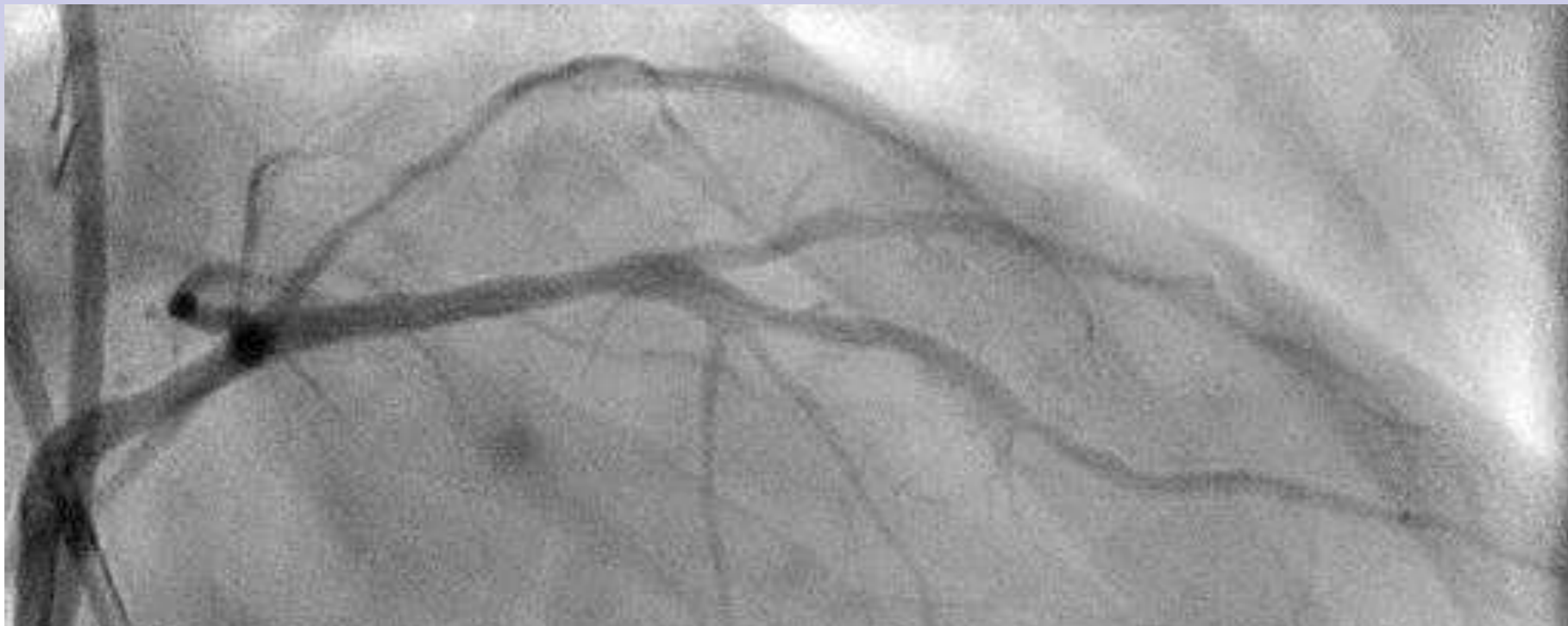
Case: LAD distal CTO

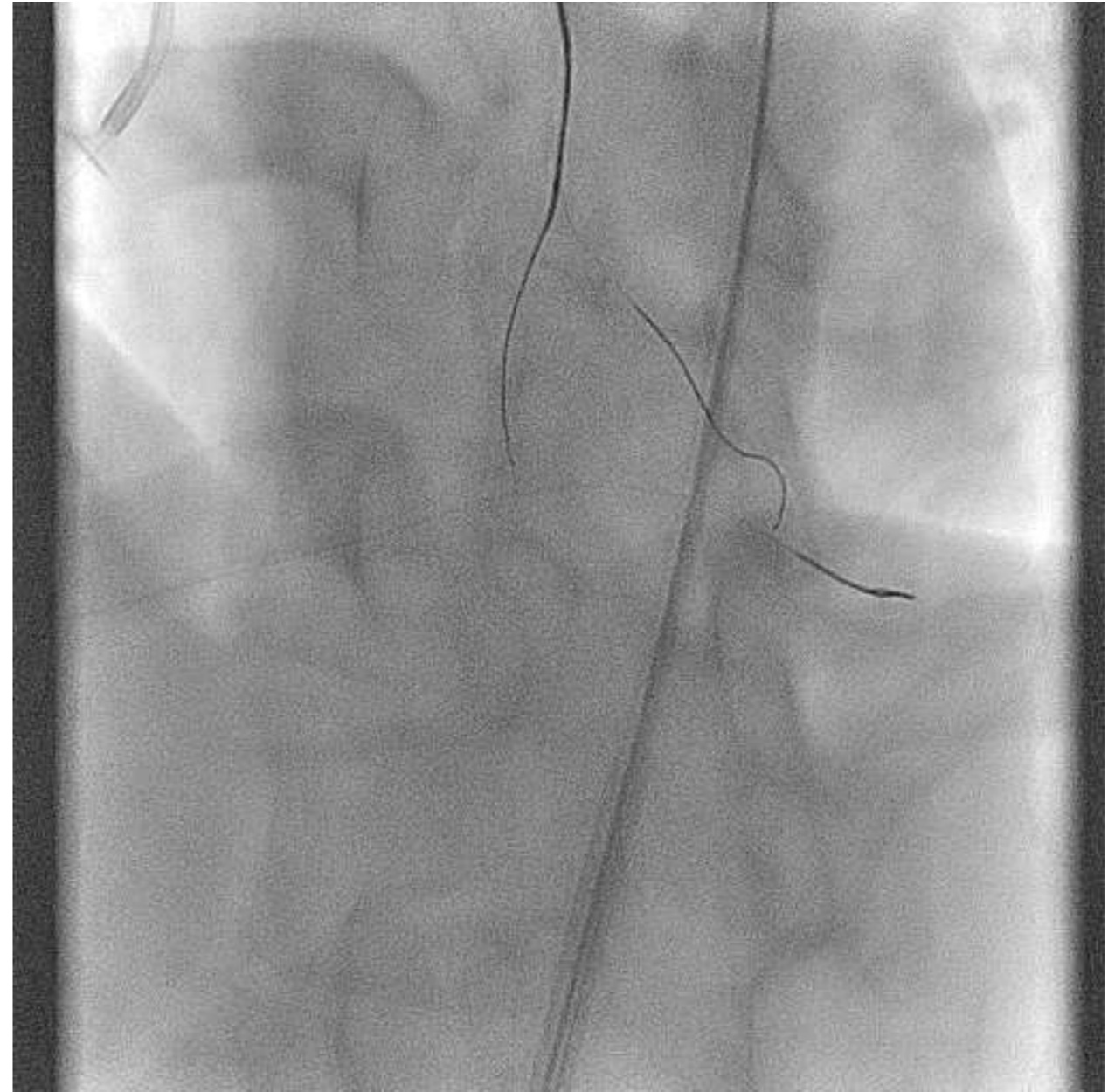


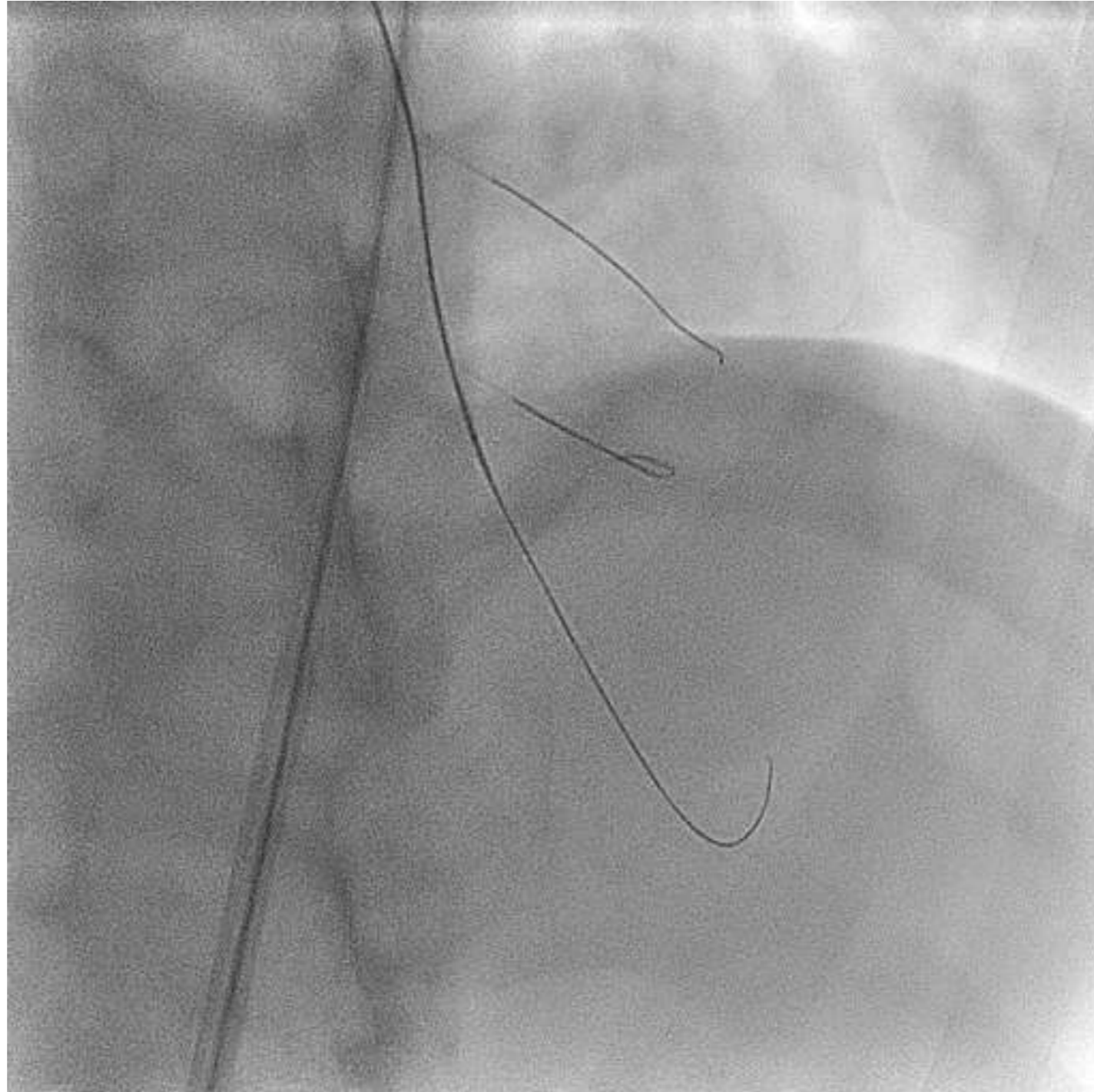


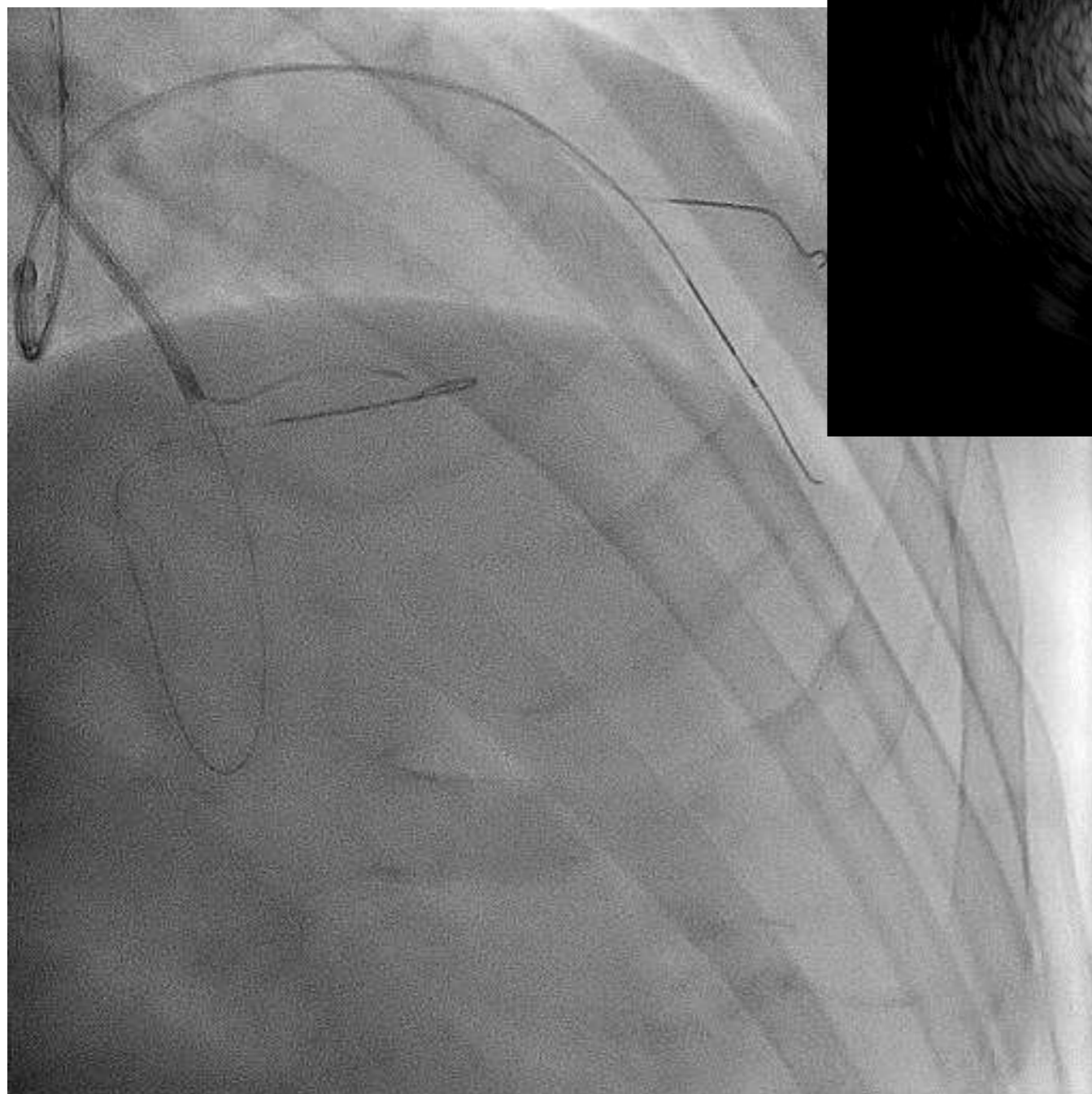
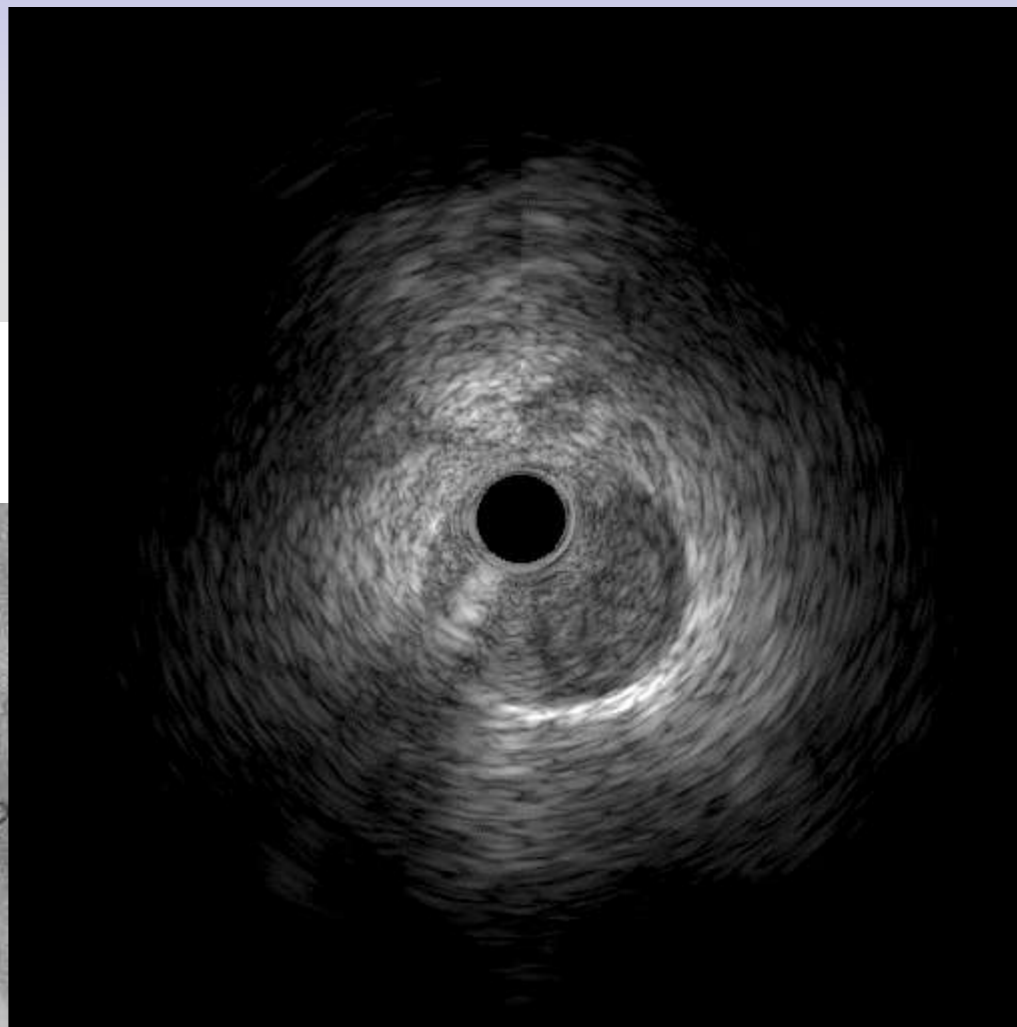
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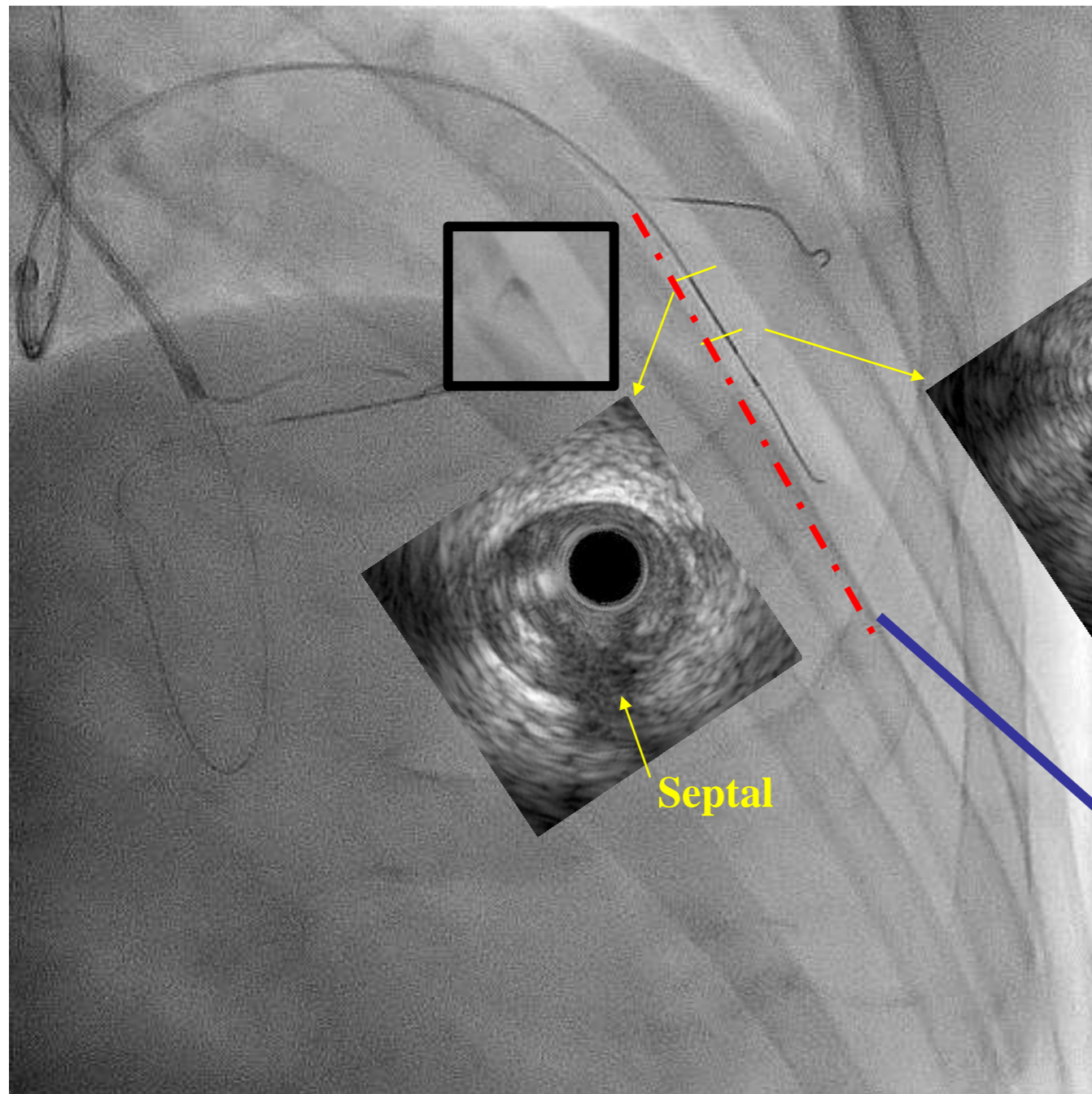






**GW could get true lumen inside of CTO.
however...**

GW went into subintimal space at distal true lumen.



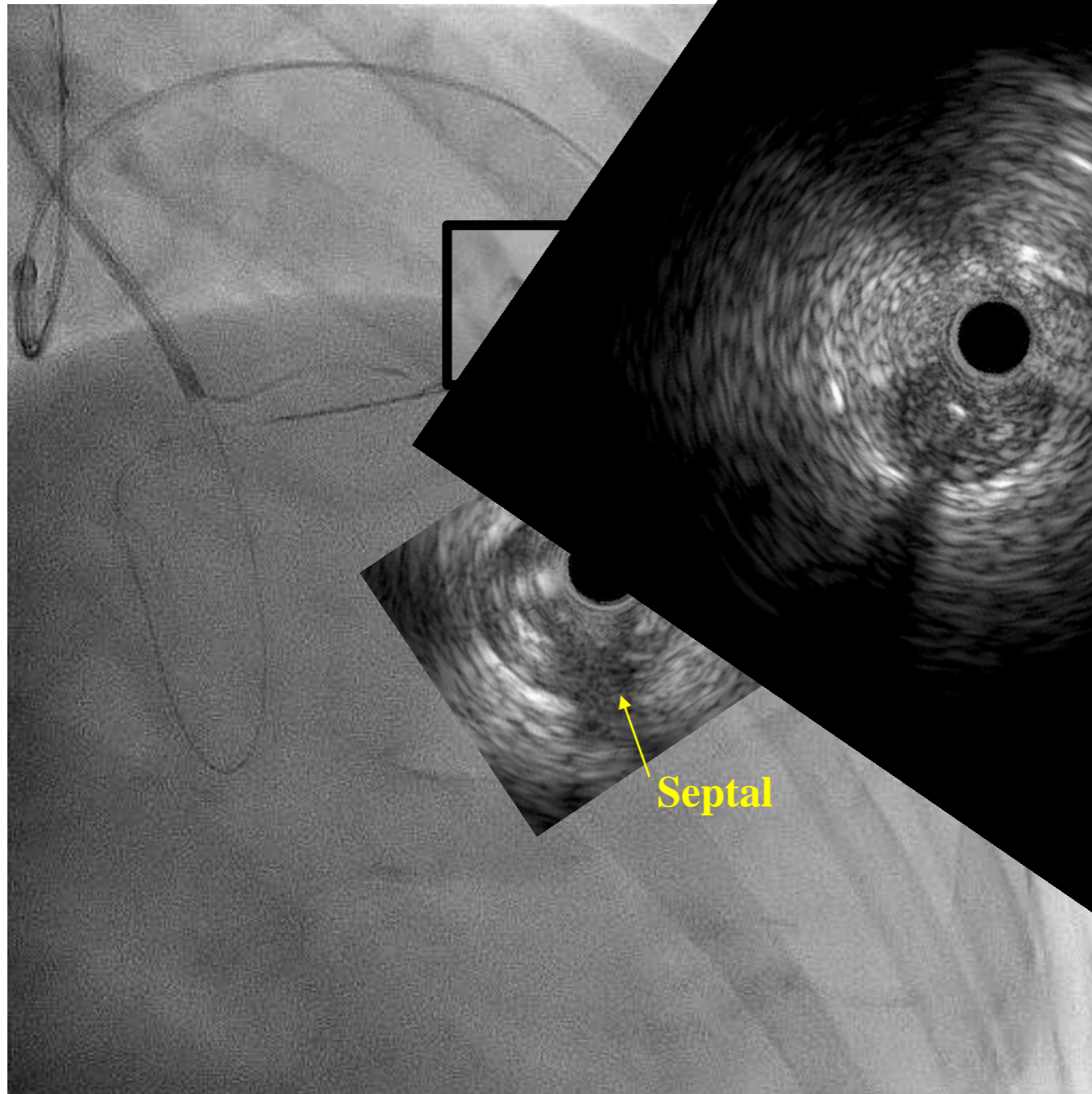
**True lumen located at
bottom side (septal side)
of 1st wire.**



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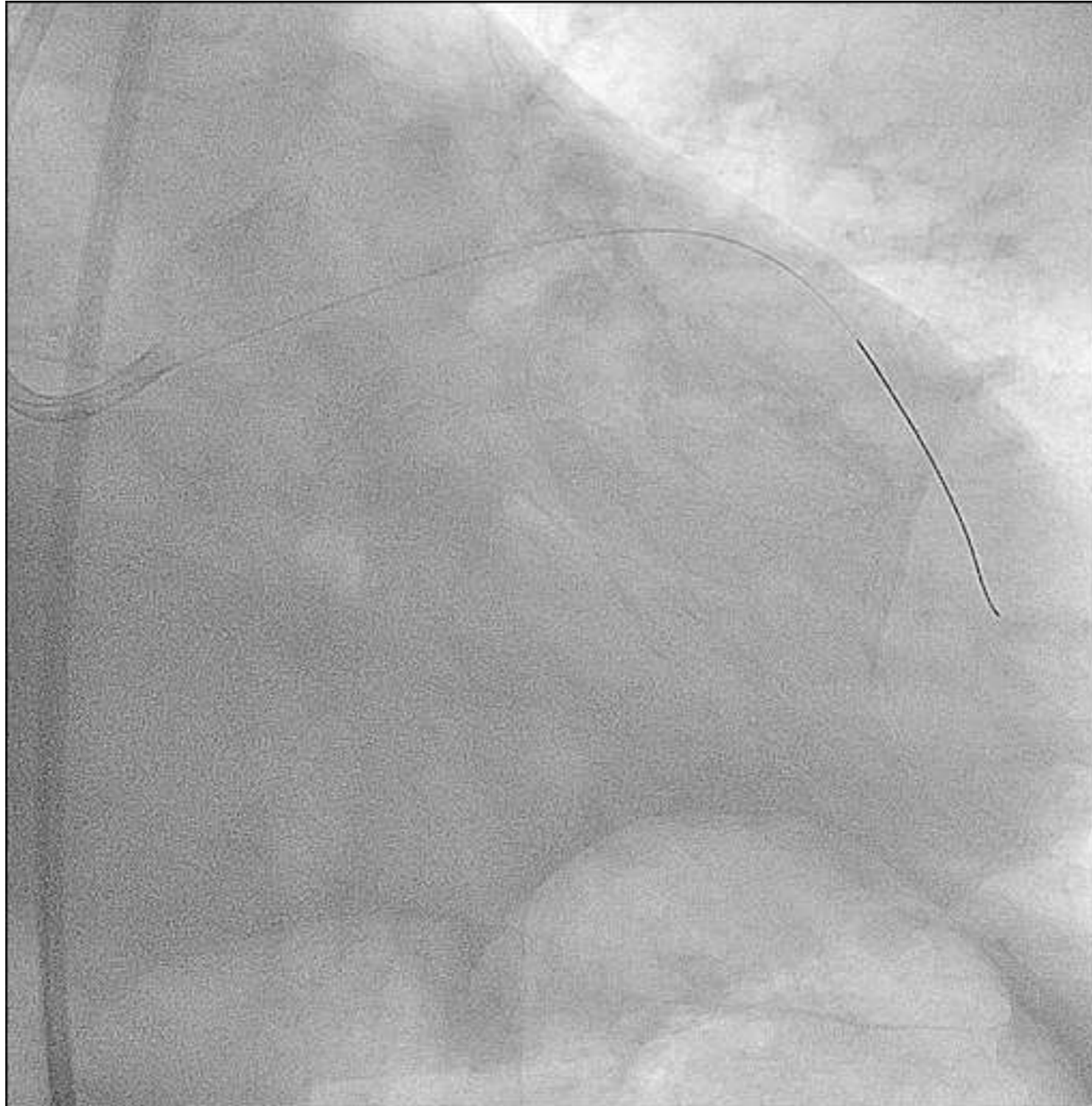
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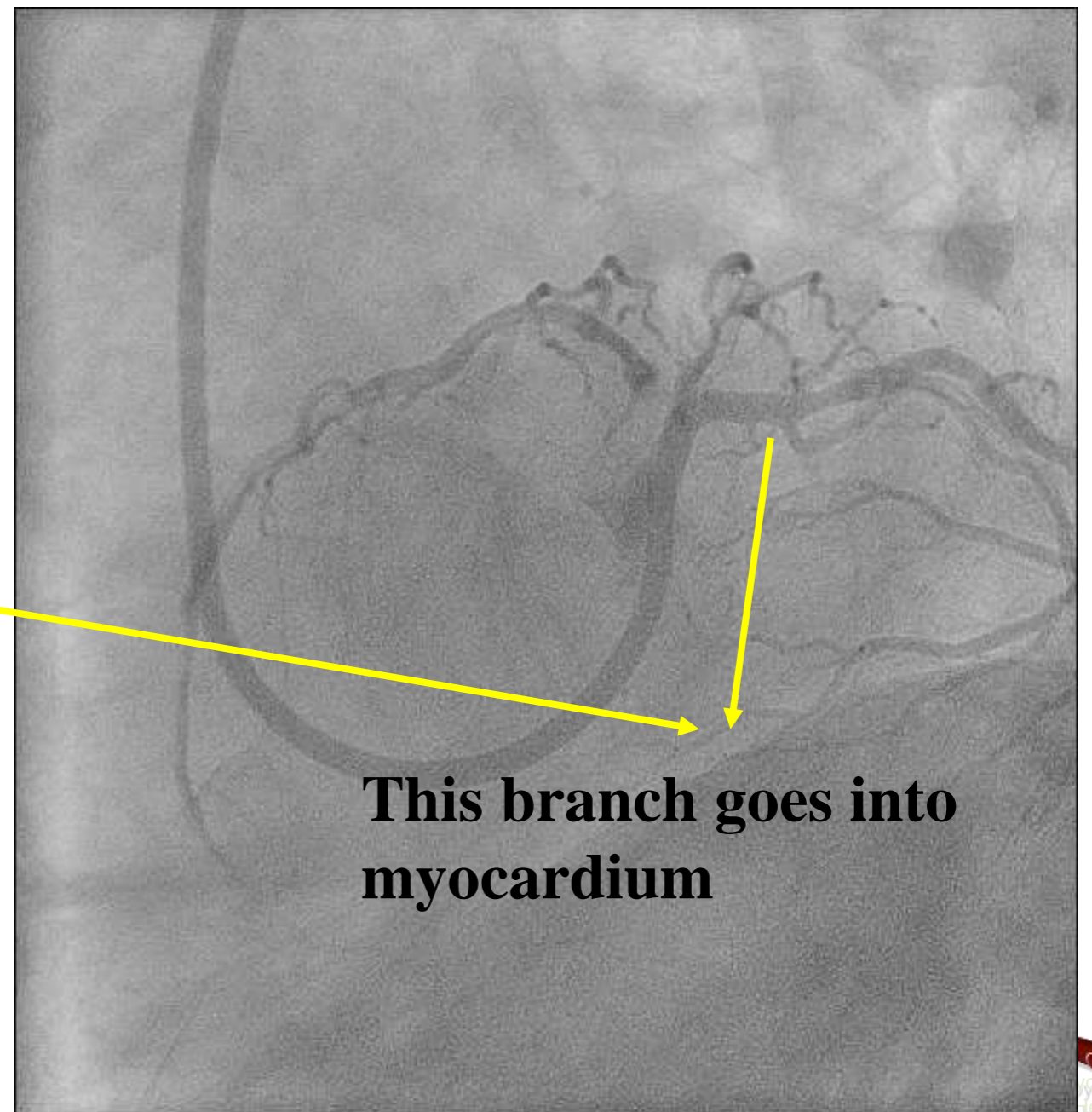
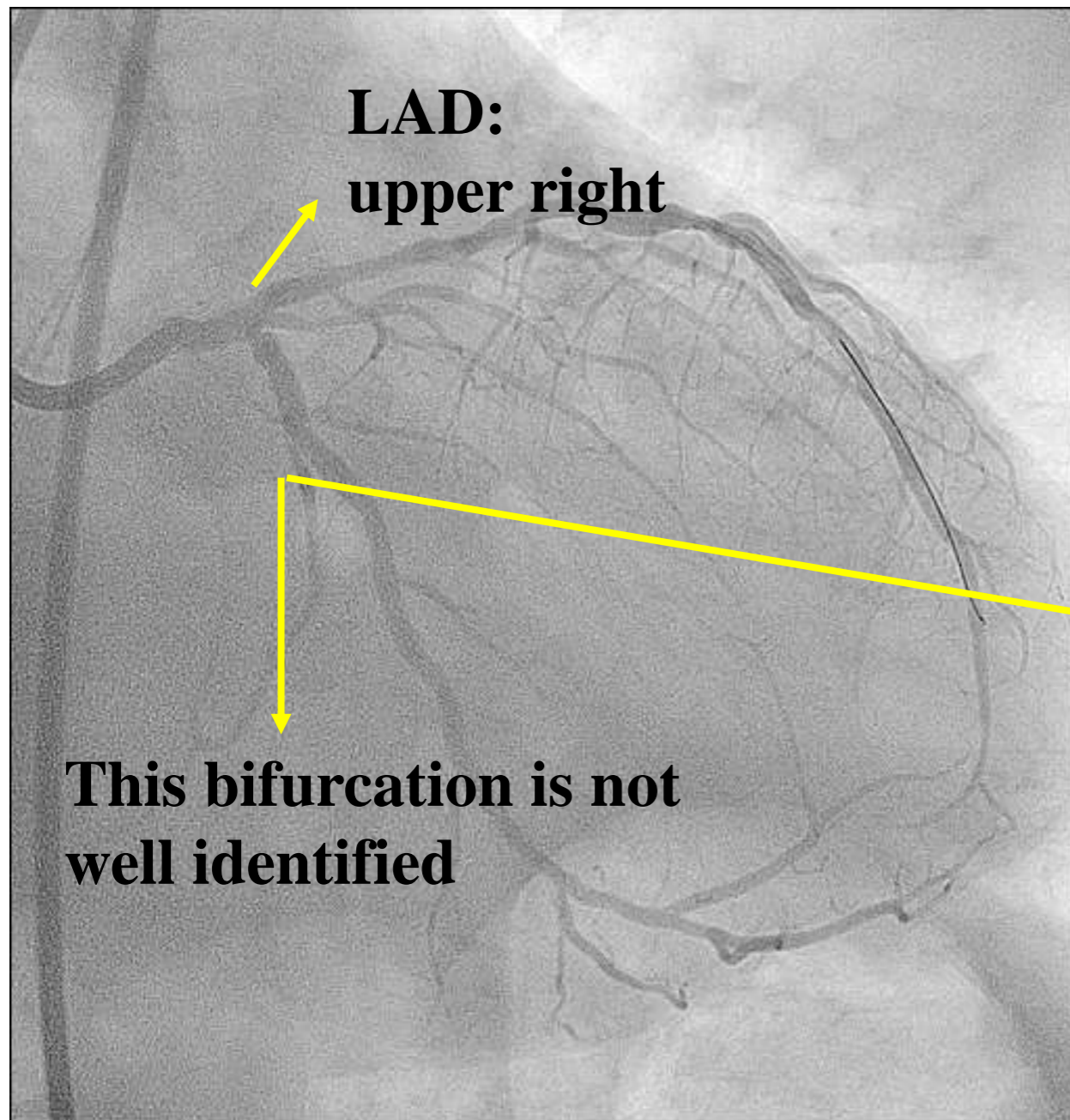


2. Wire bias as landmark



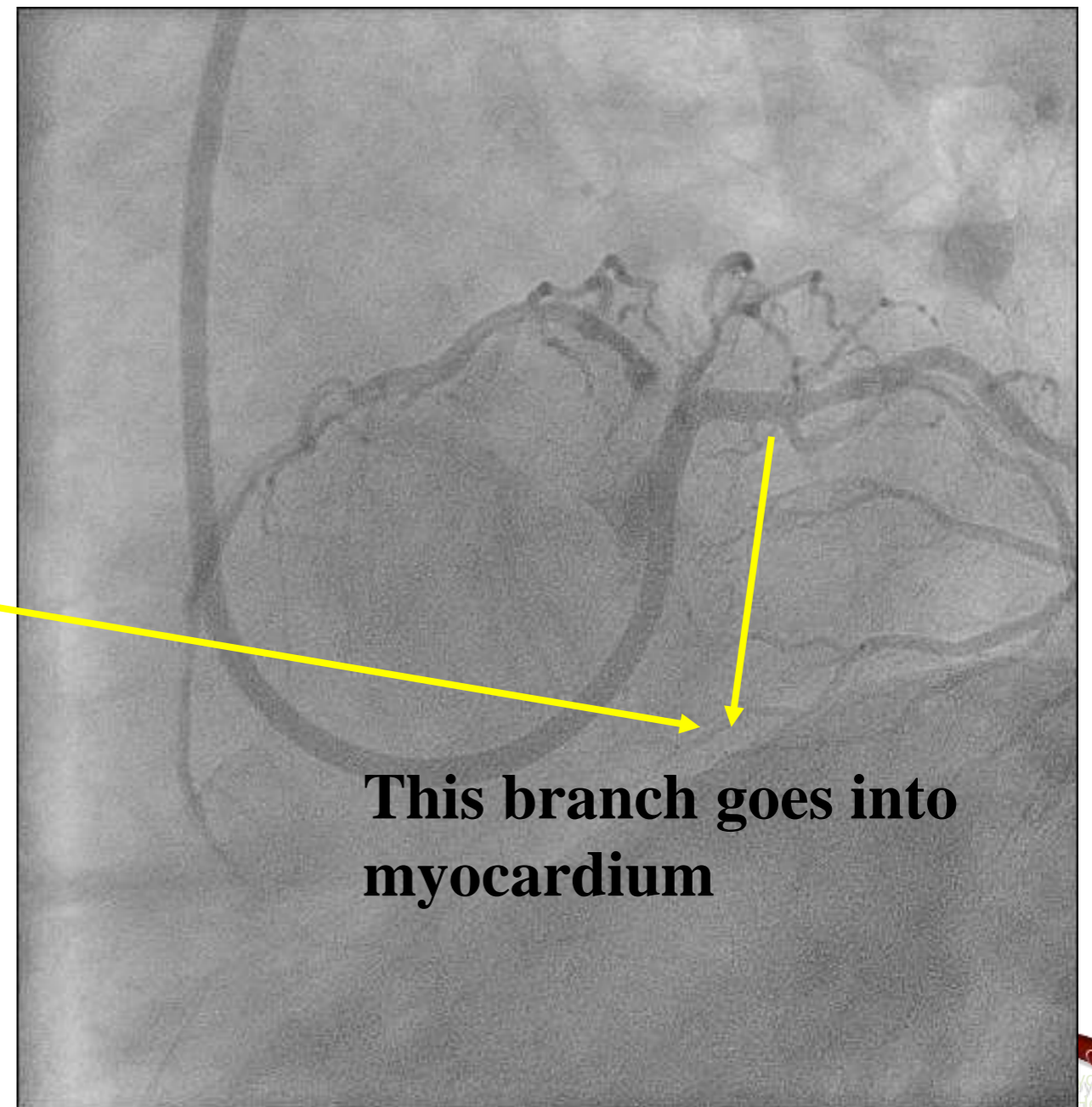
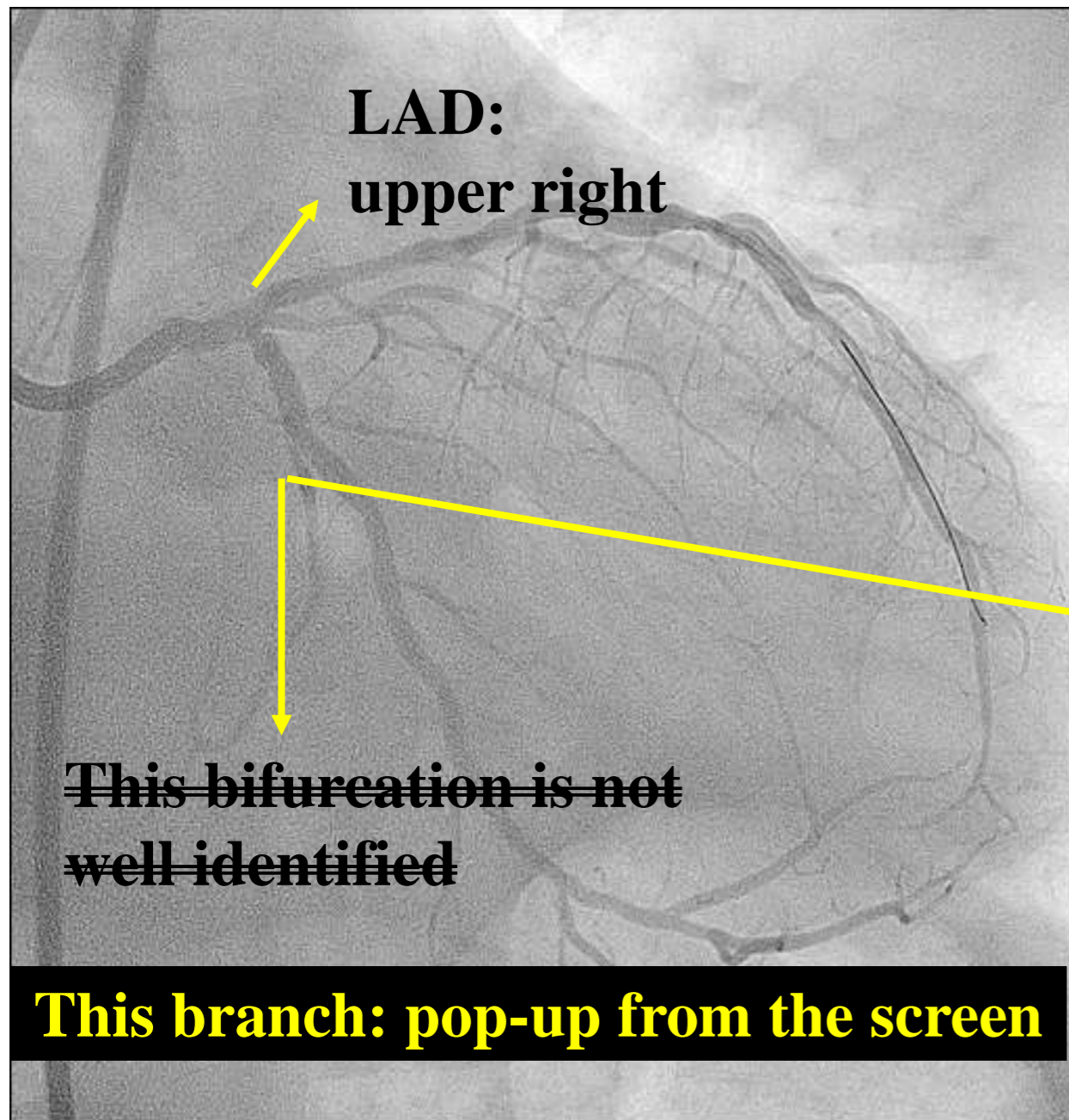


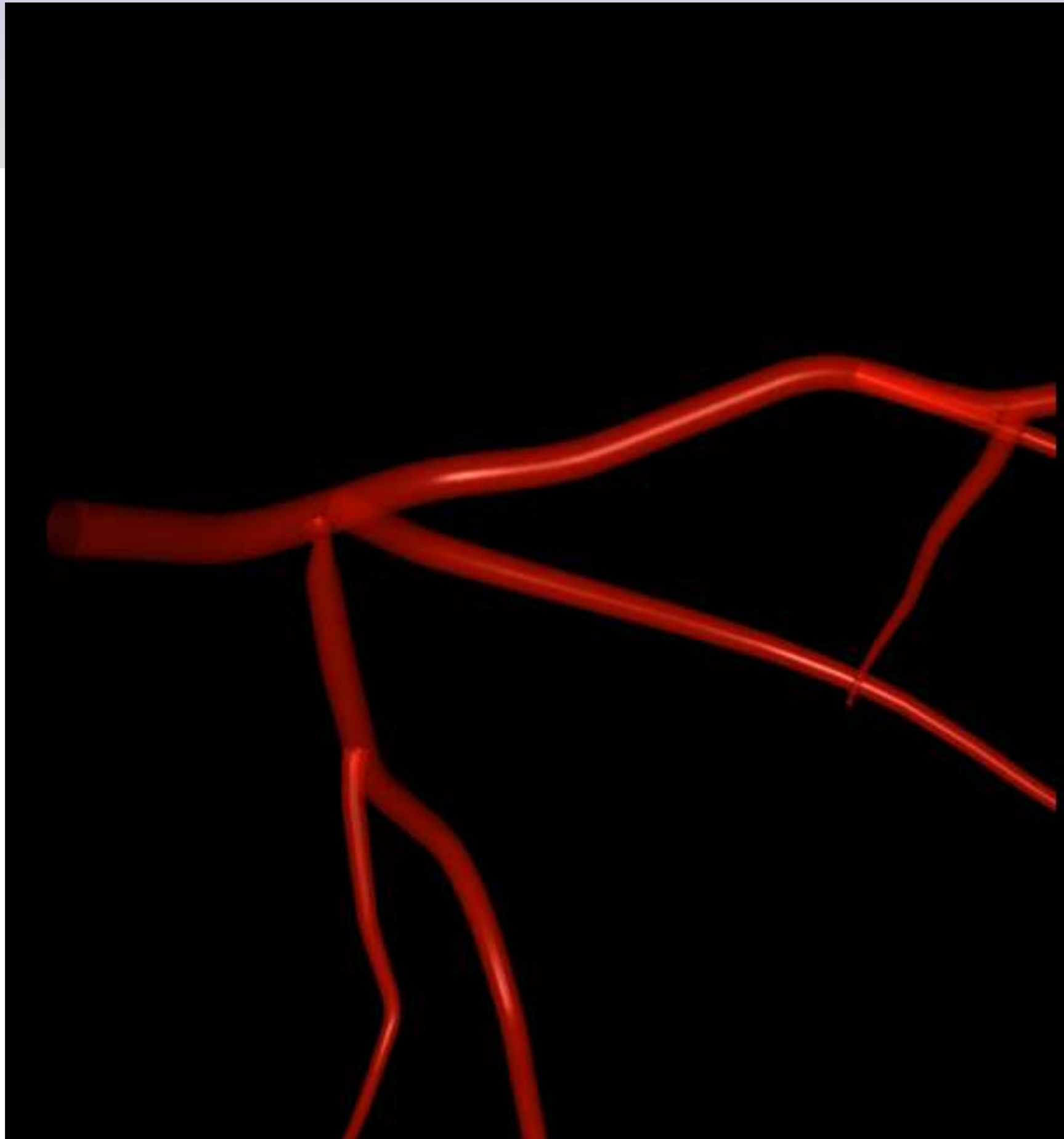
Spider

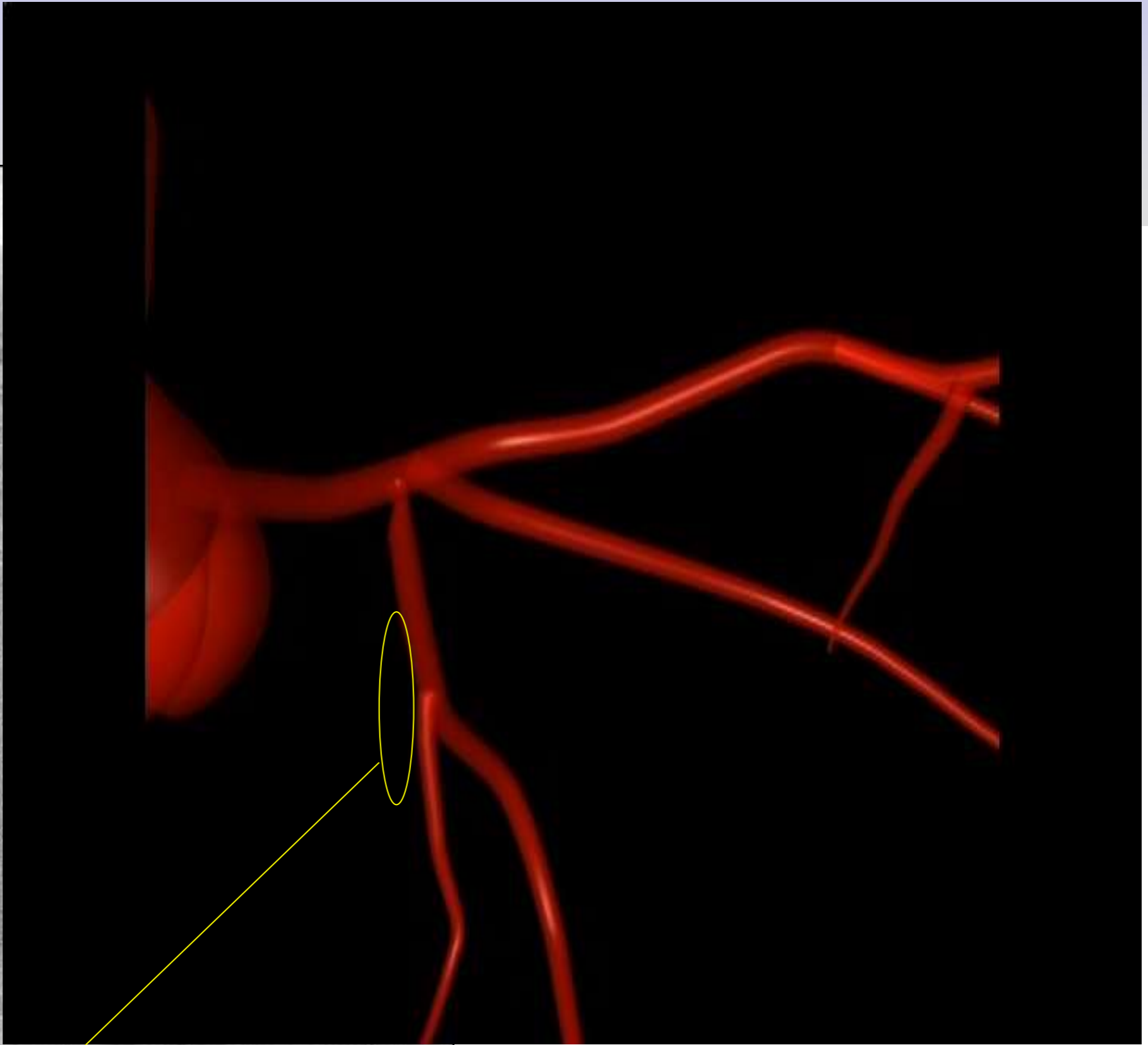




Spider

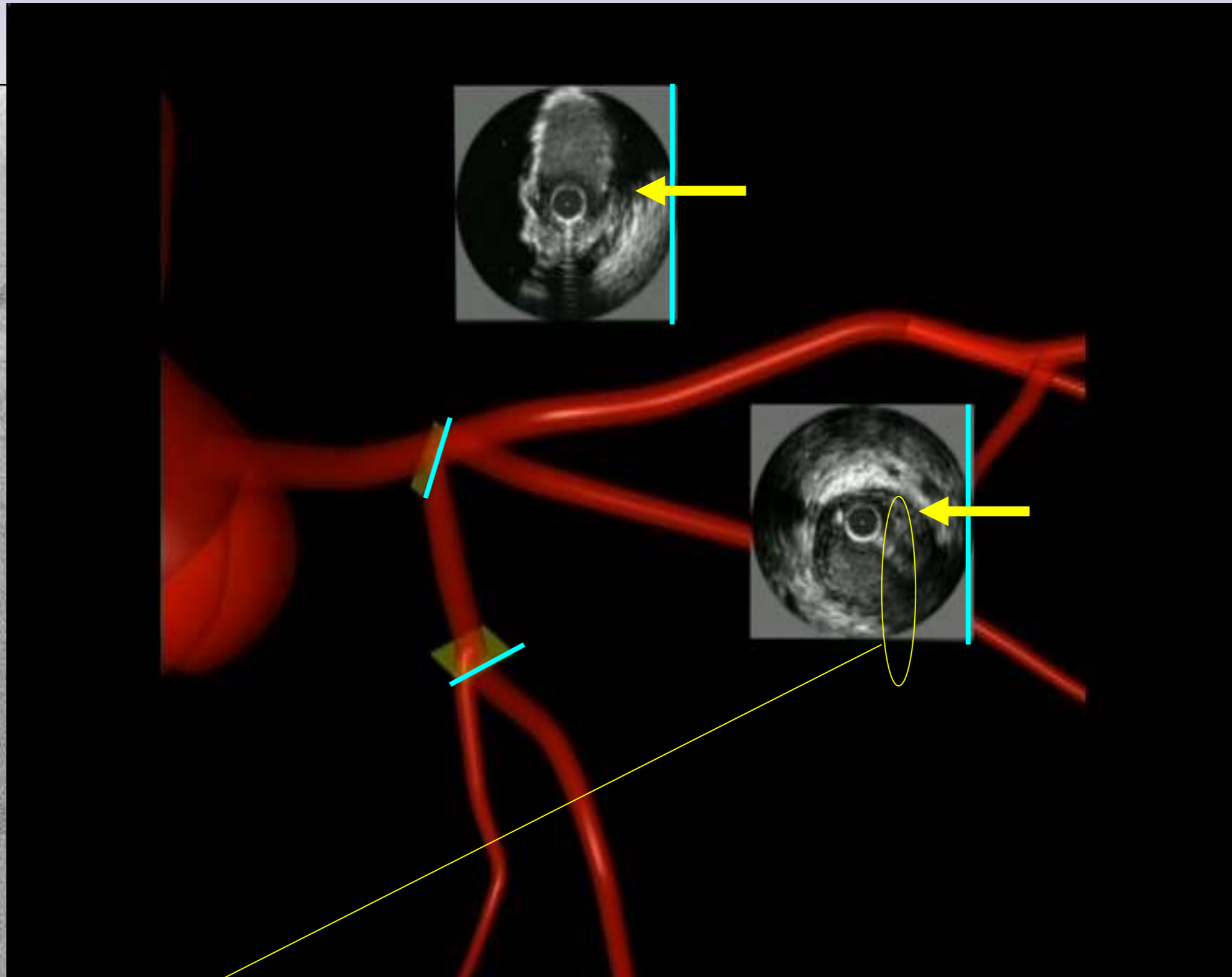
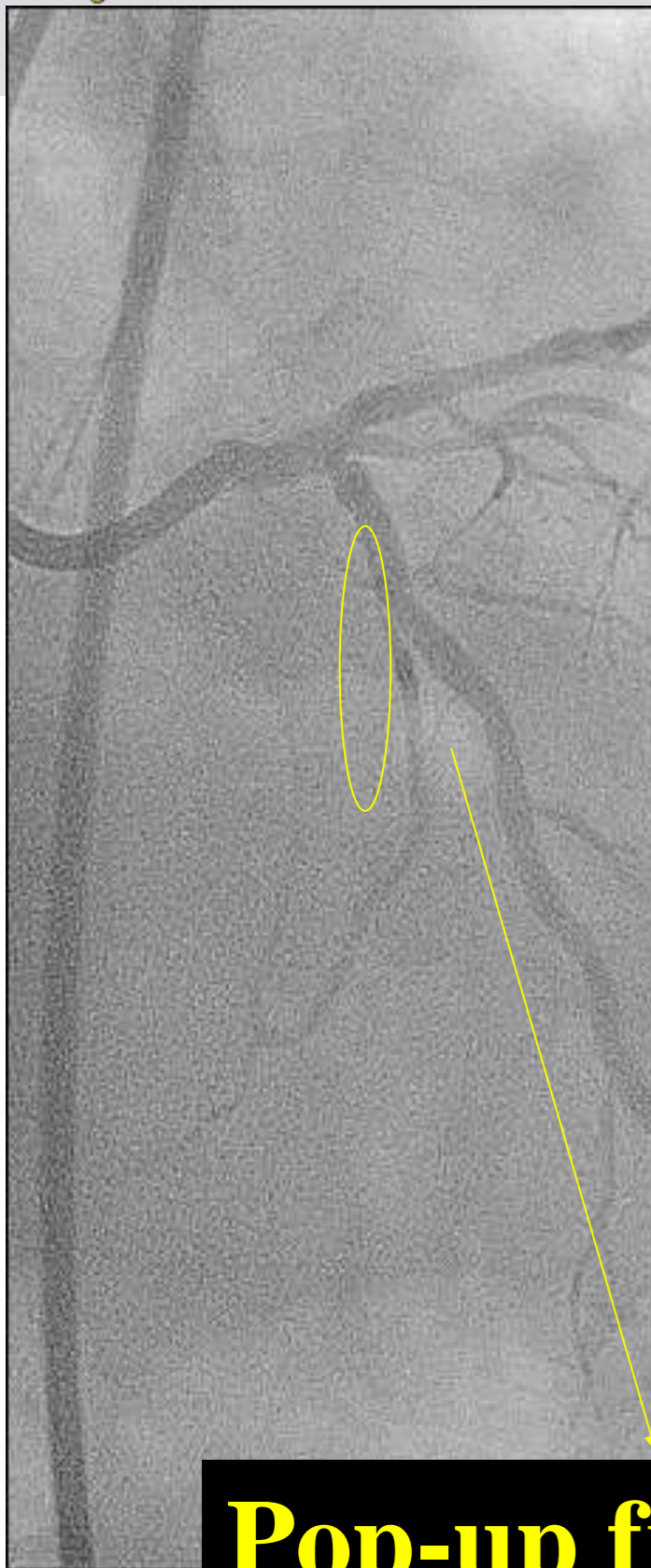






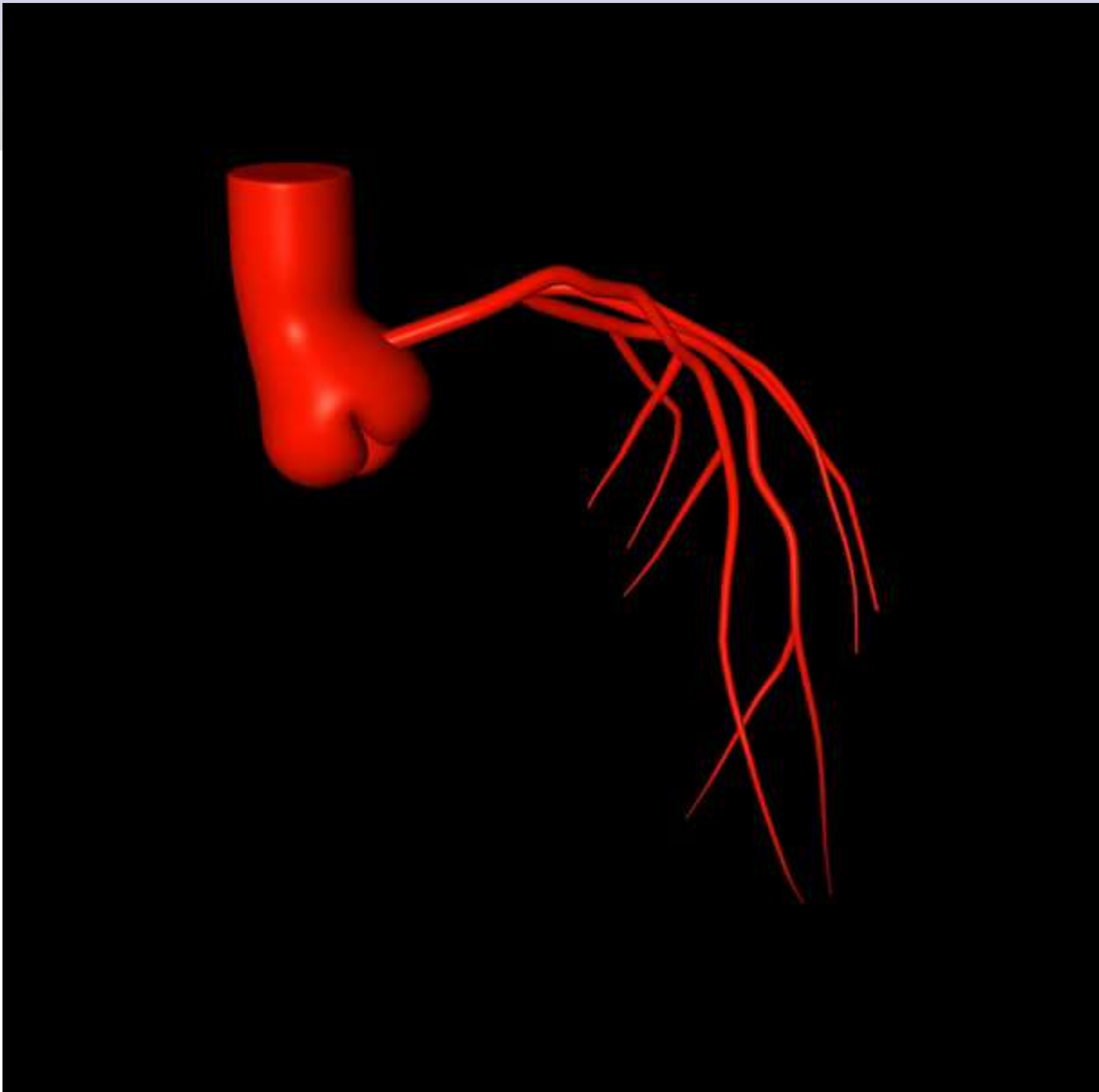
Pop-up from the screen





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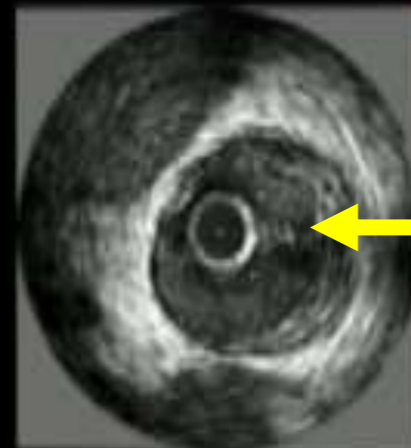
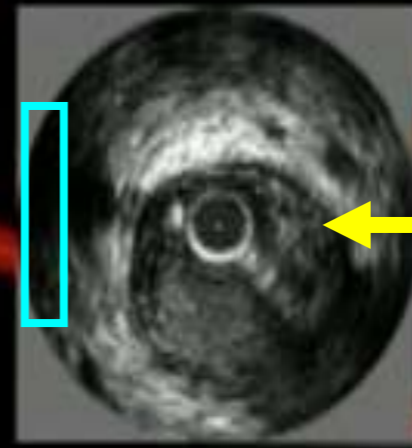
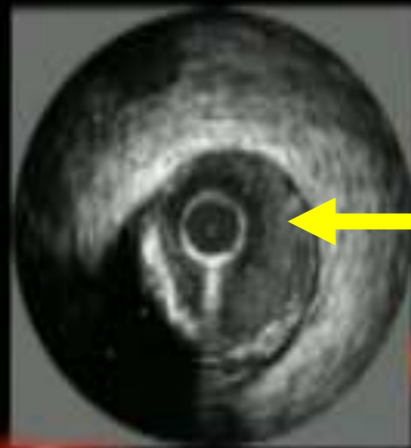
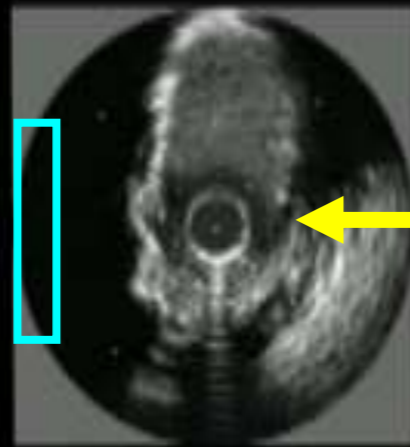


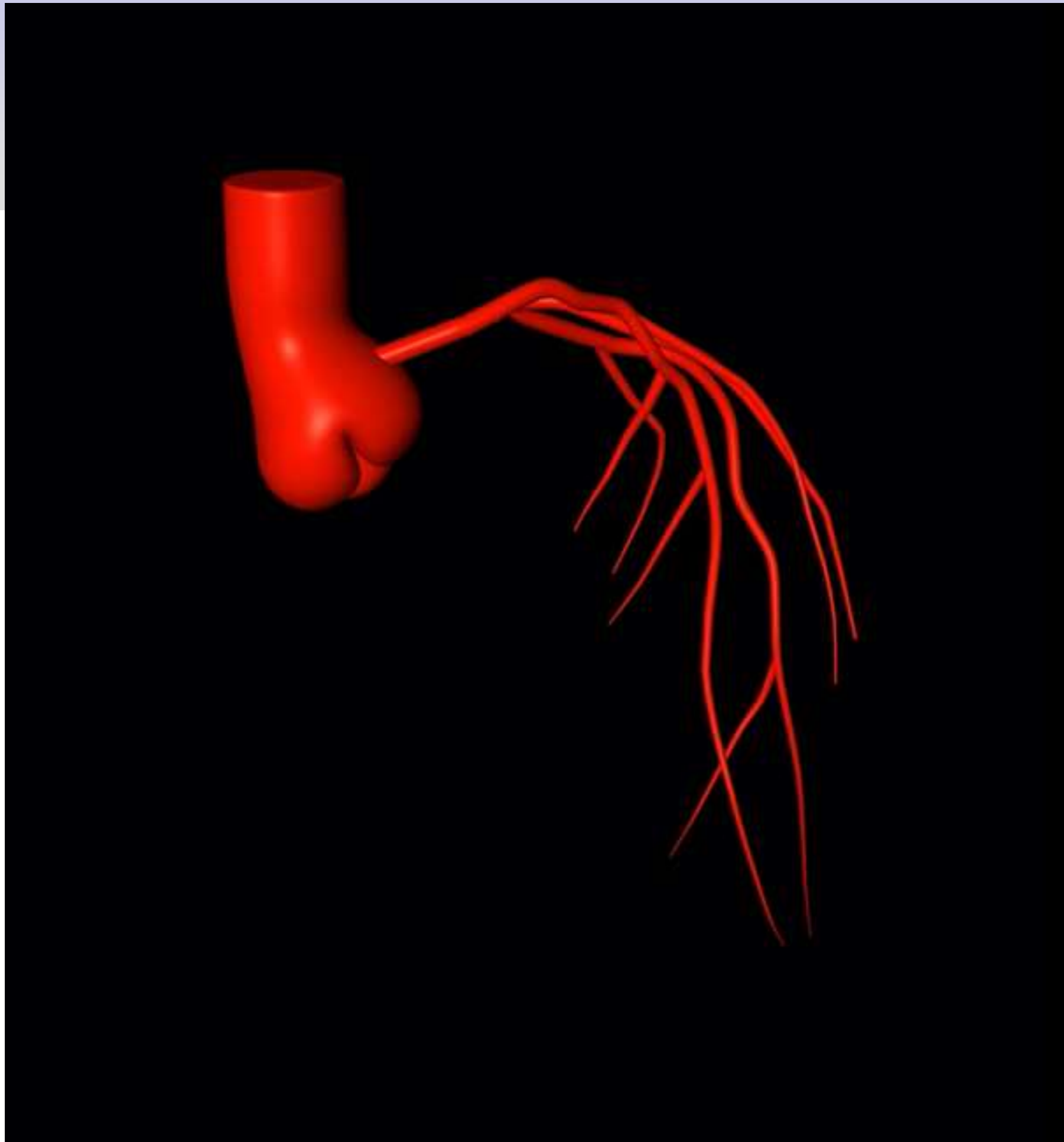


Guide wire: bottom side of IVUS

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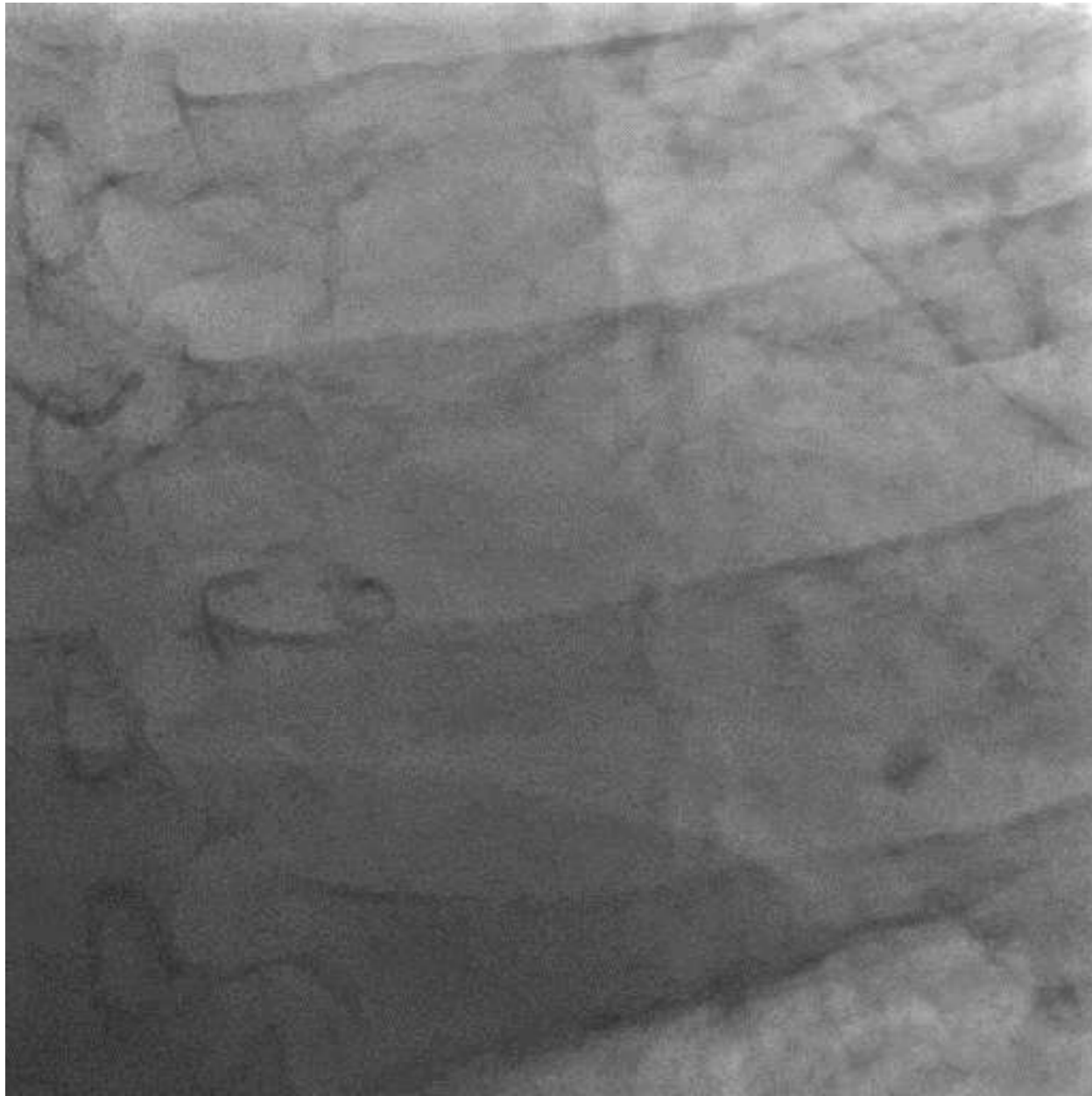
Guide wire is overlapping with IVUS

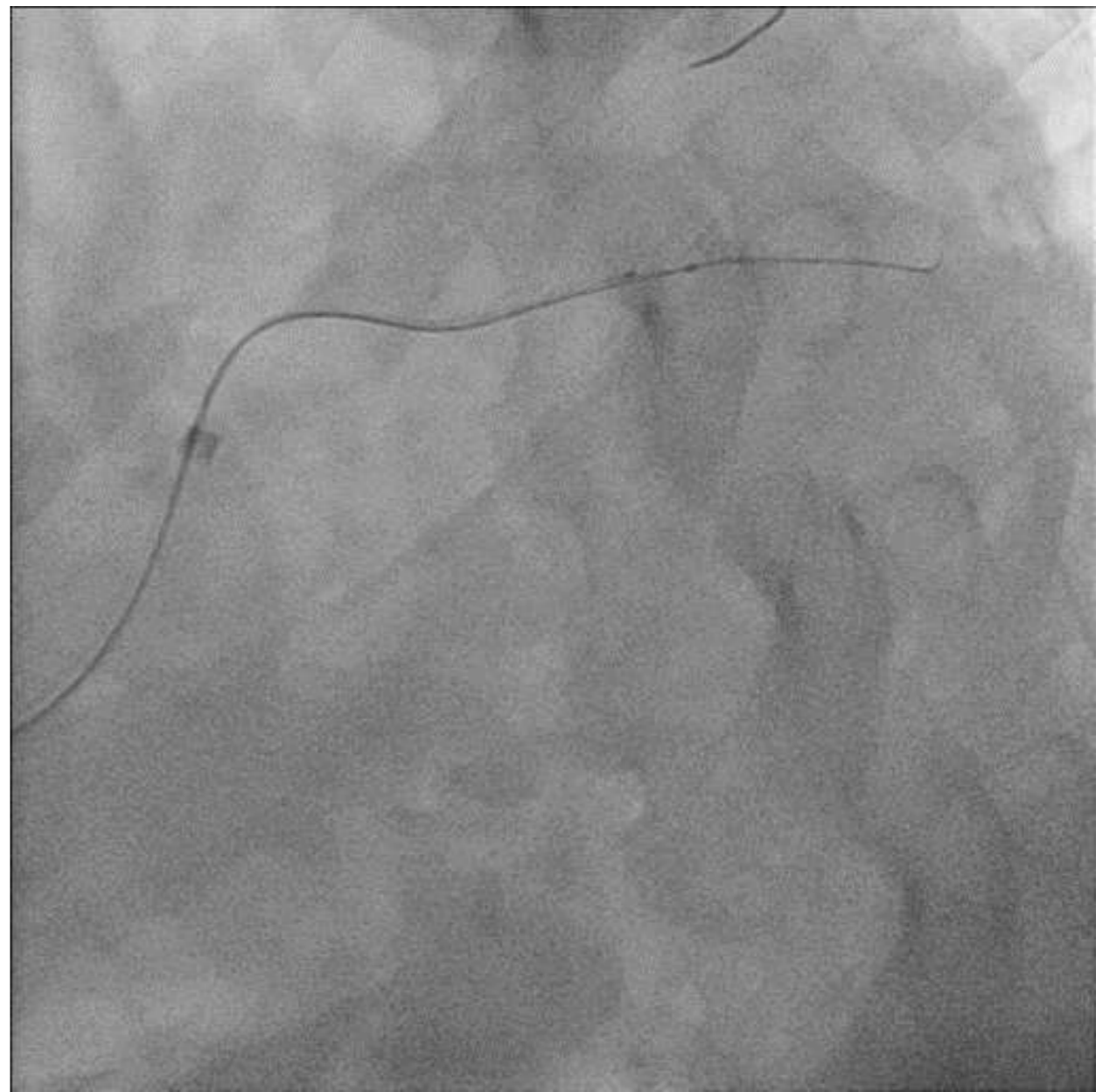


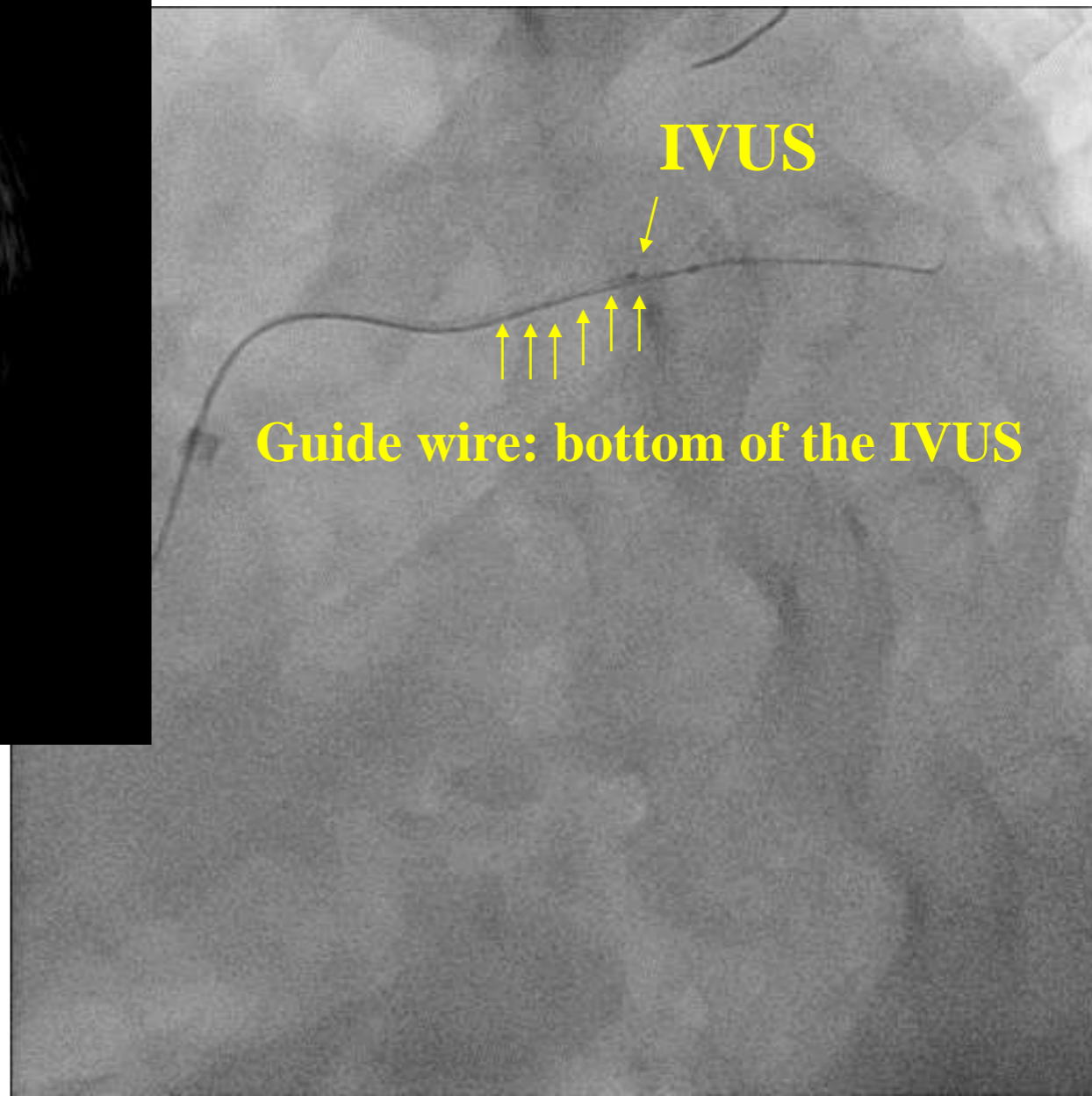
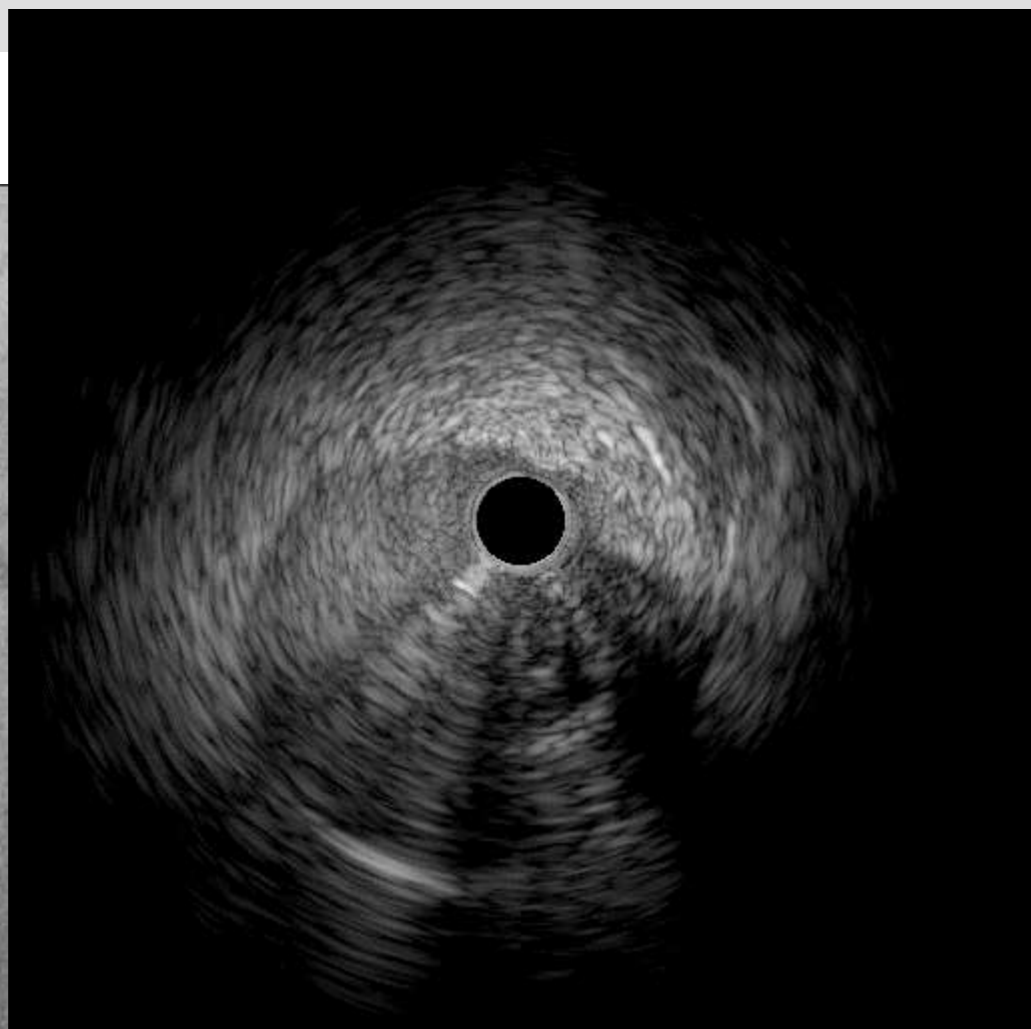


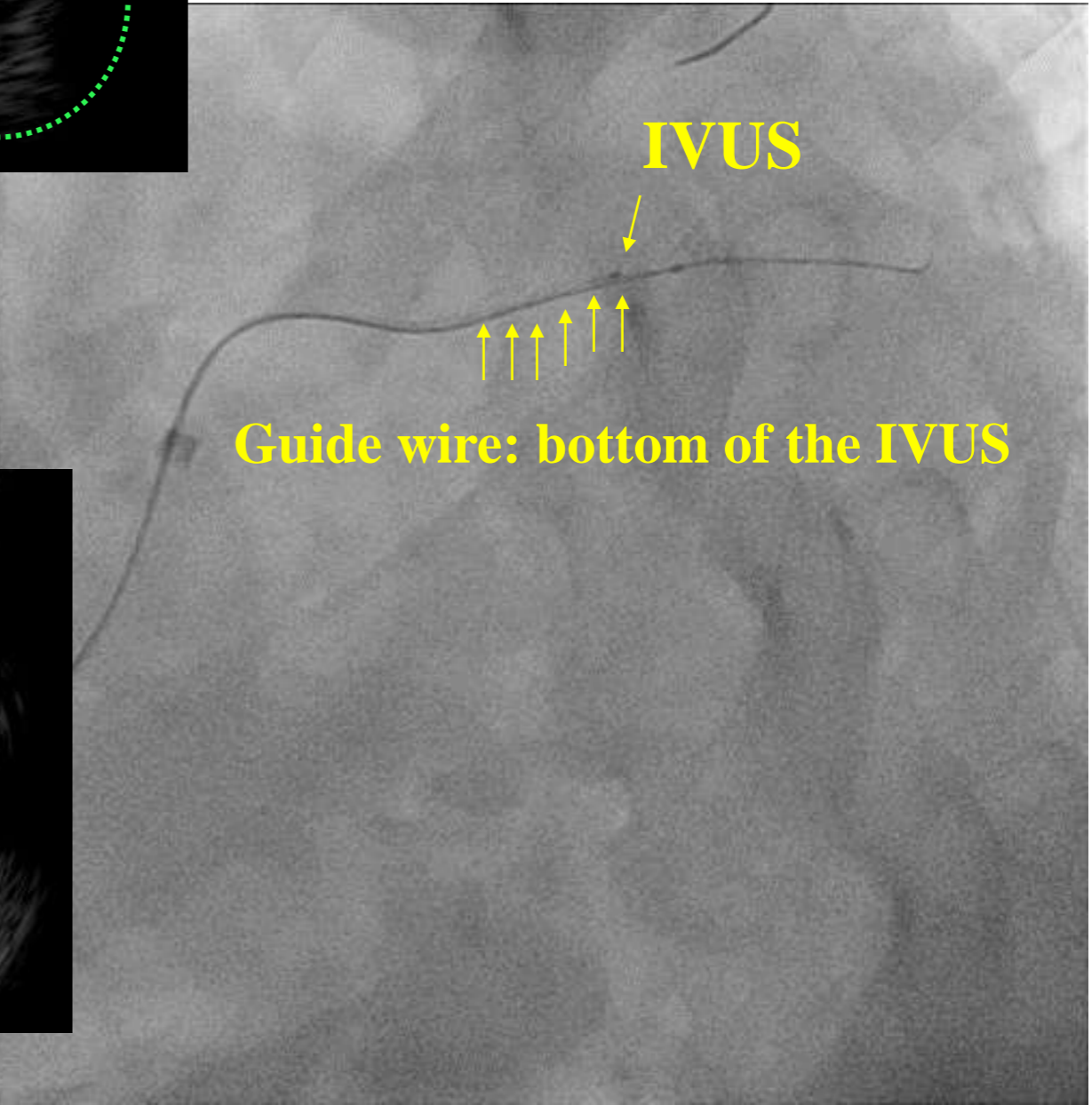
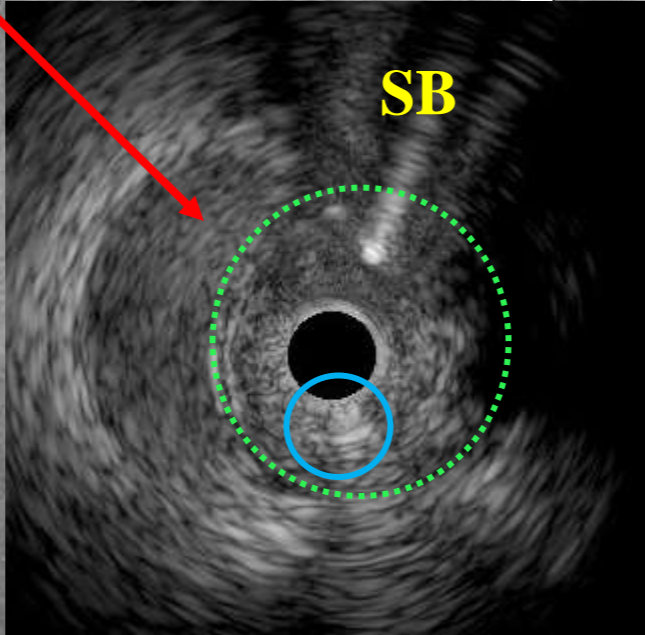
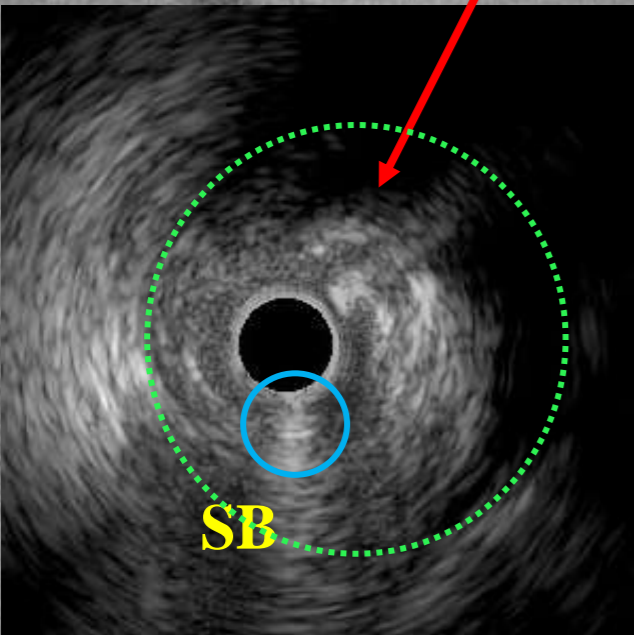
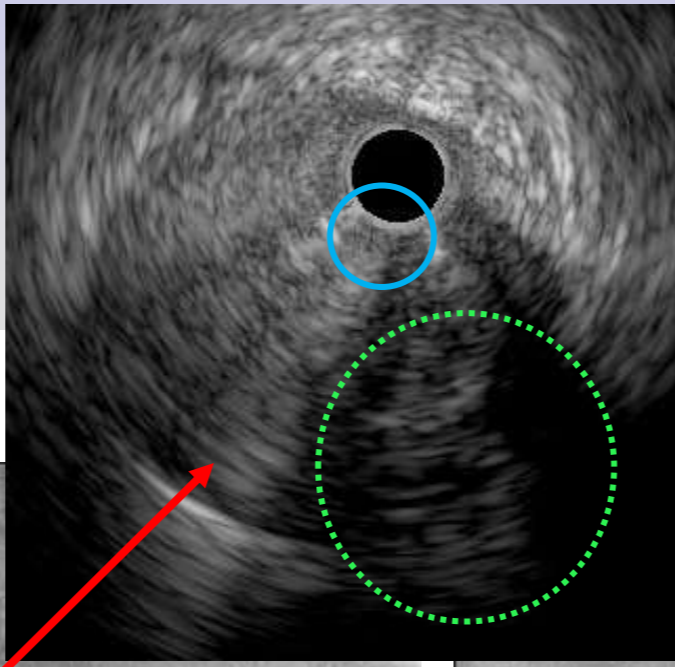
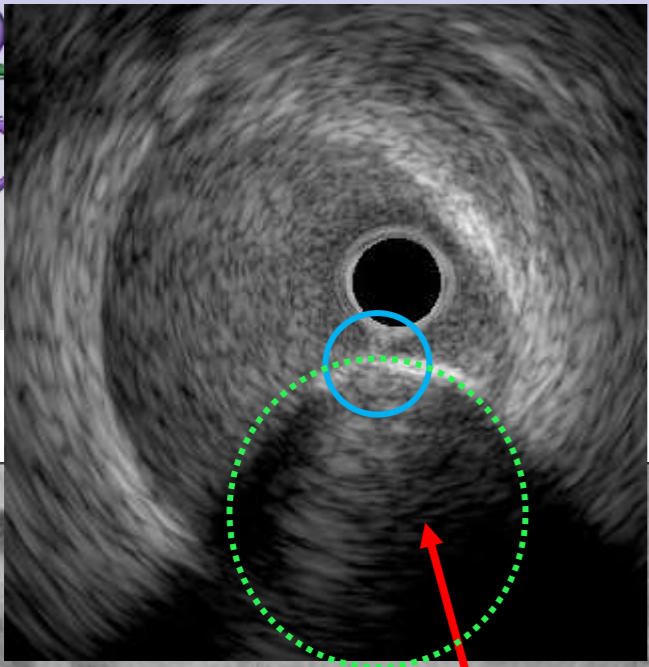
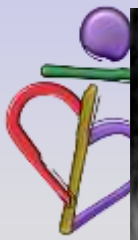


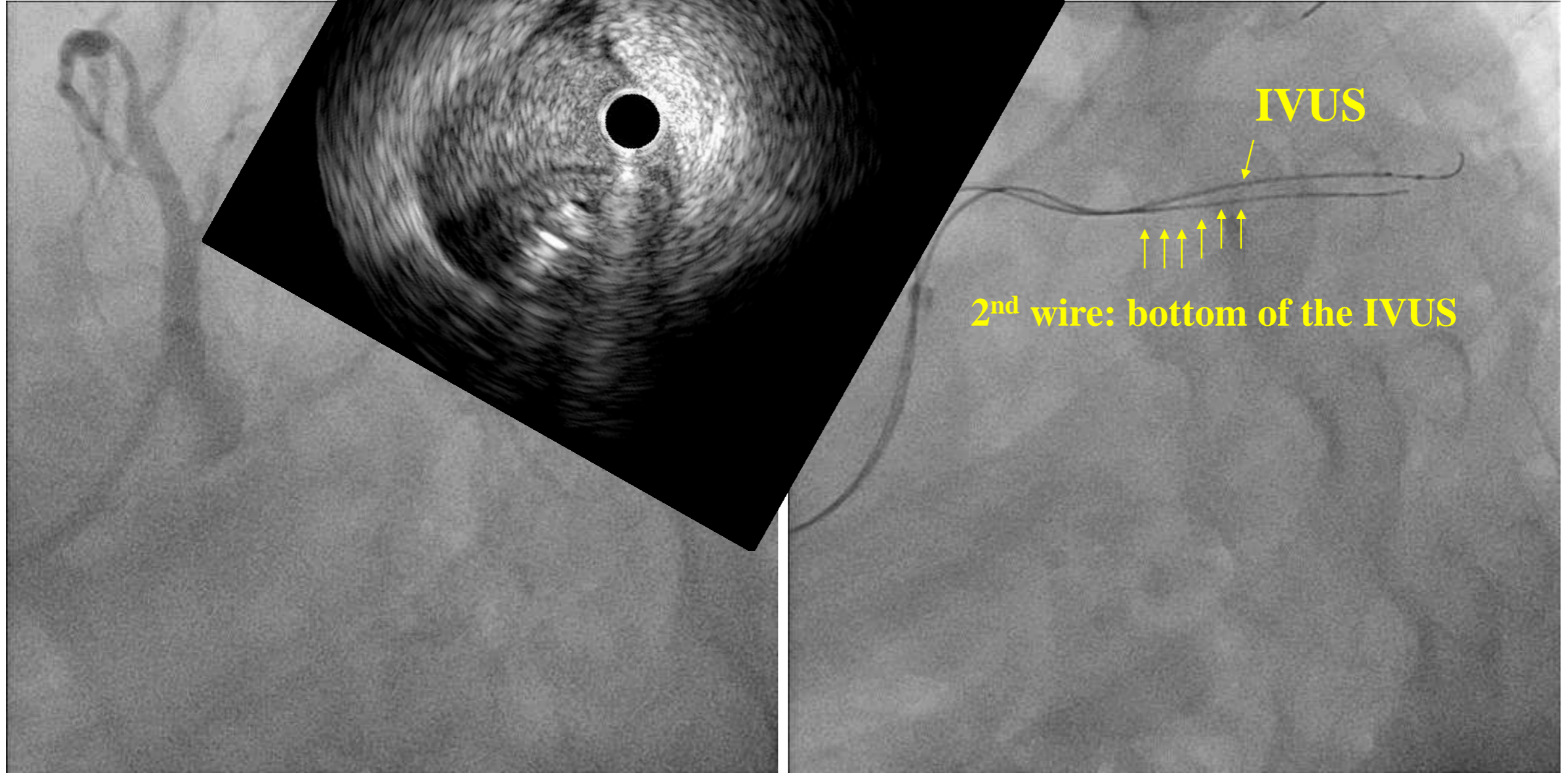
Case: LCX CTO













IVUS guided rewiring

- **Guiding catheter**
≥ 8Fr (some IVUS catheters are available 7Fr system. Terumo, BS)
- **Linkage angiographic finding with IVUS is important.**
- **Side branch and wire bias are useful for understanding plaque distribution.**
- **Rewiring should be started at the entry of sub-intimal space to get true lumen.**
- **Re-entry from sub-intimal space to true lumen is usually very difficult.**

