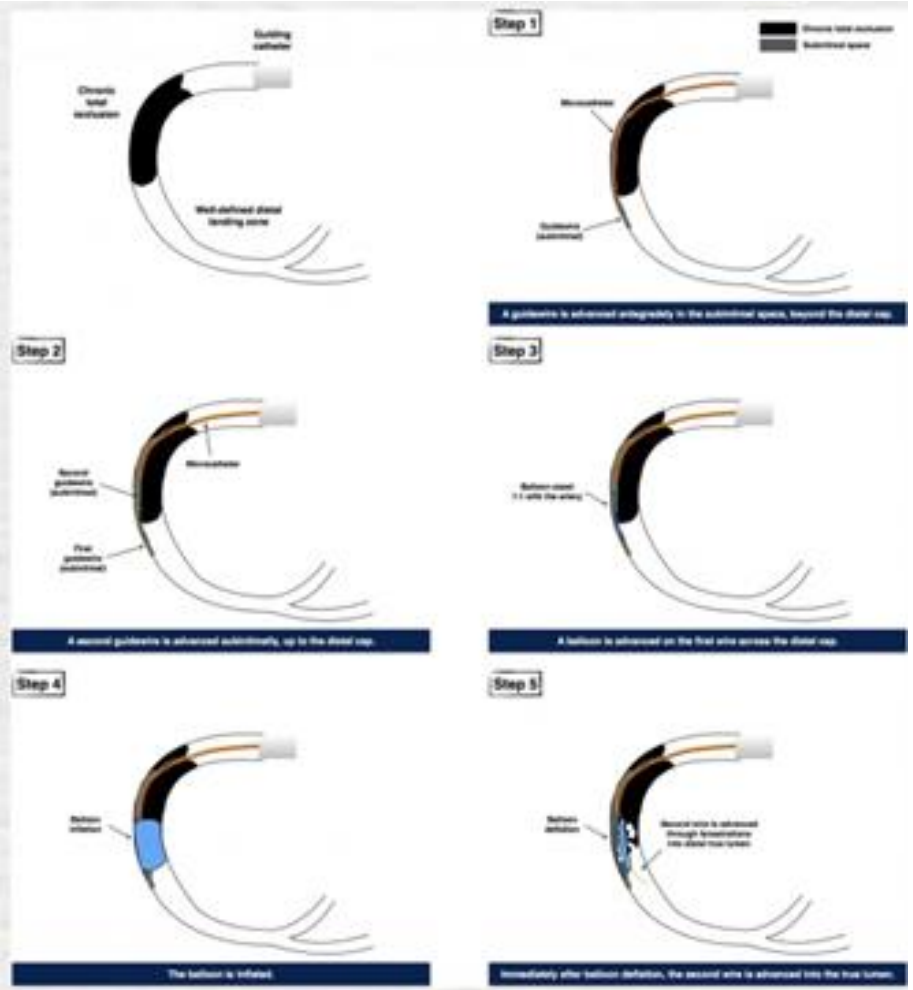
Current Status of ADR and AFR in CTO PCI

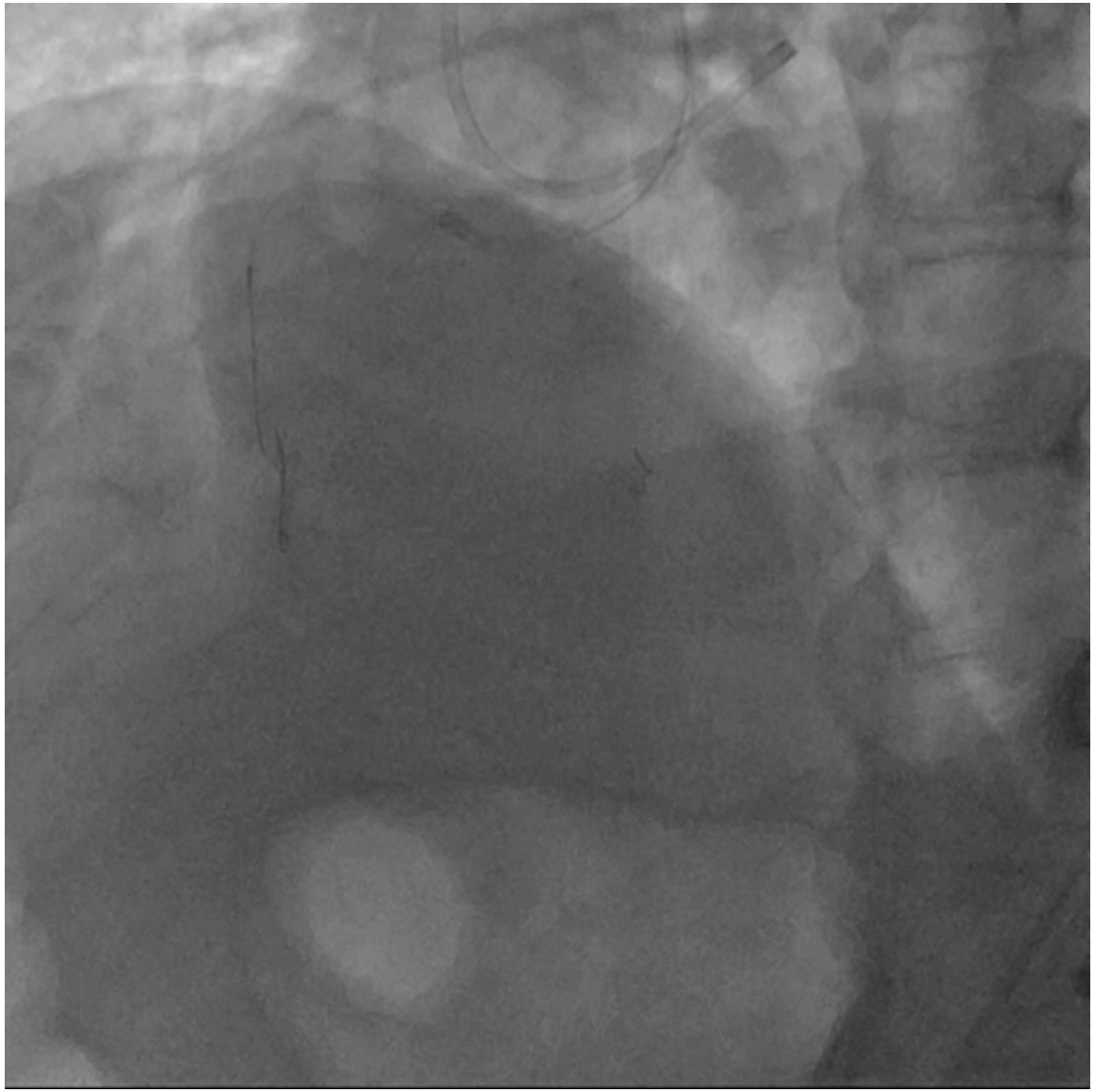
Toyohashi Heart Center

Maoto Habara, M.D.

Antegrade Fenestration Re-entry

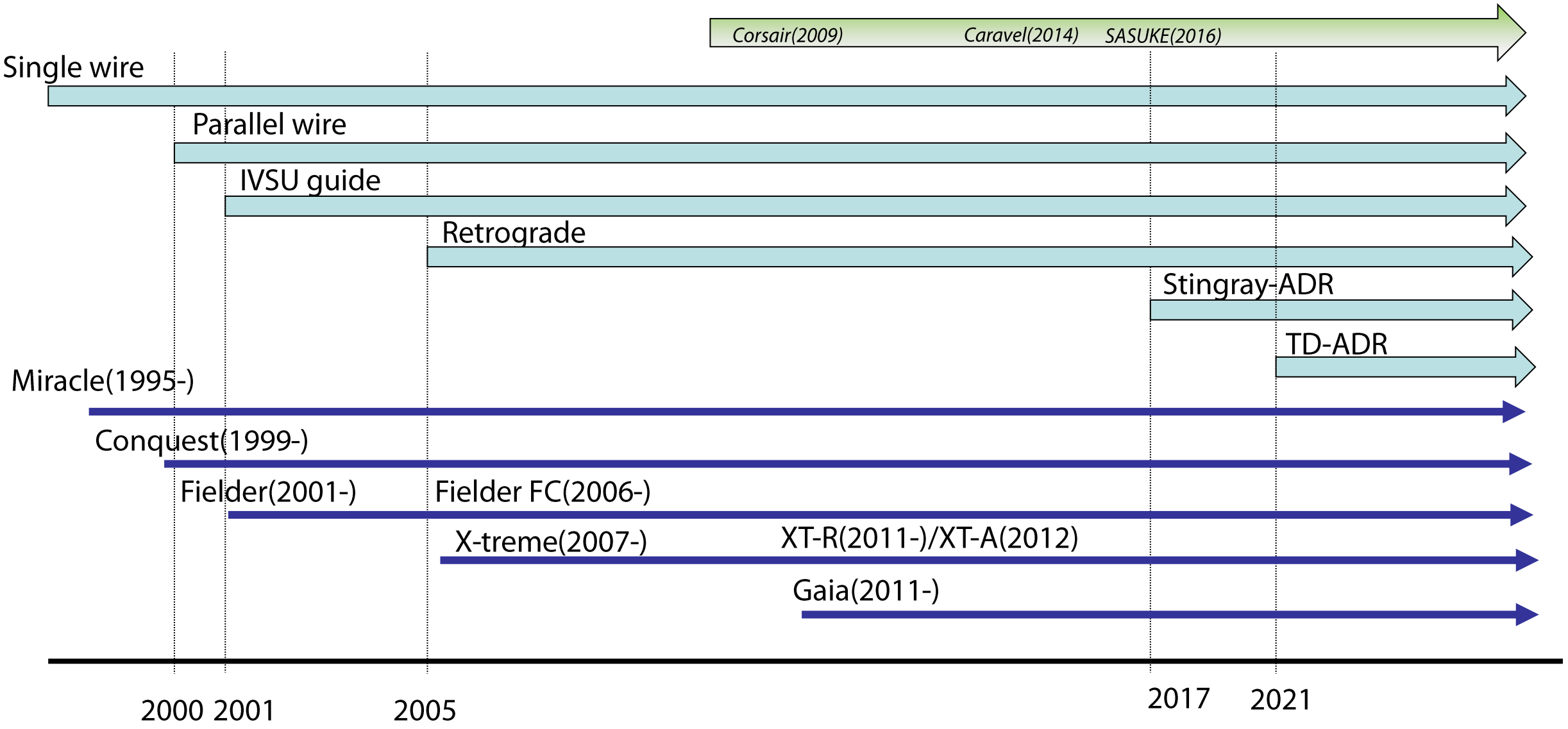


Azzalini L, et al. J Am Coll Cardiol. 2018 Sep, 72 (13_Supplement) B150.

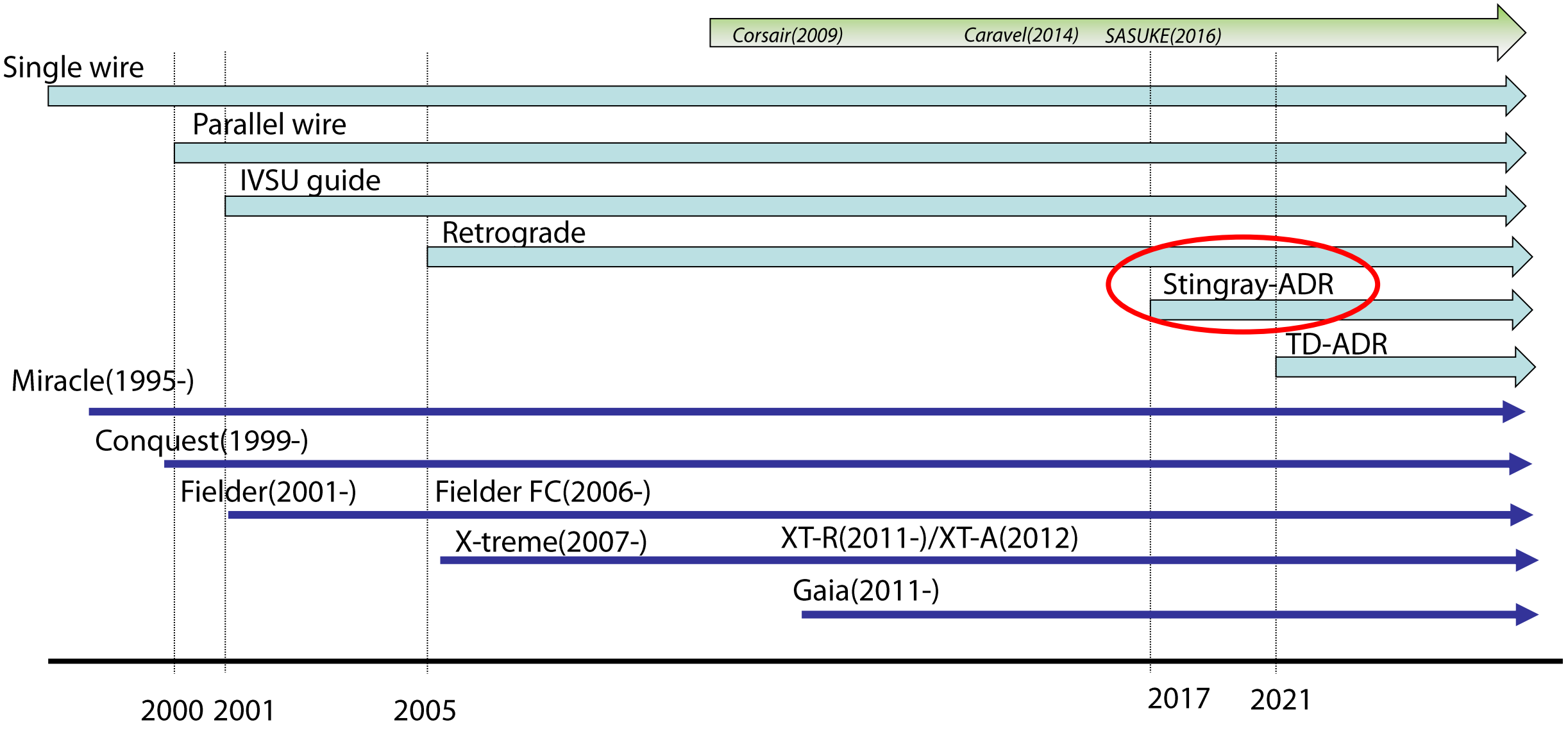


＜Dr Kashima @ Sapporo cardiovascular clinic＞

History of CTO technique in Japan

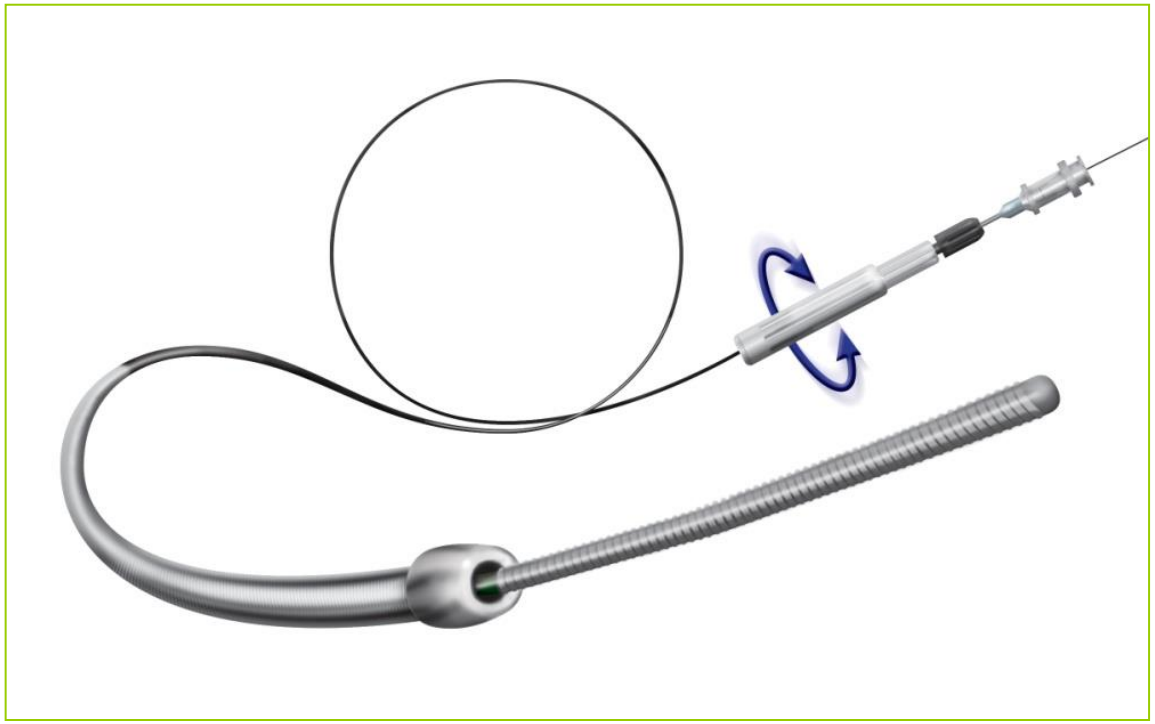


History of CTO technique in Japan

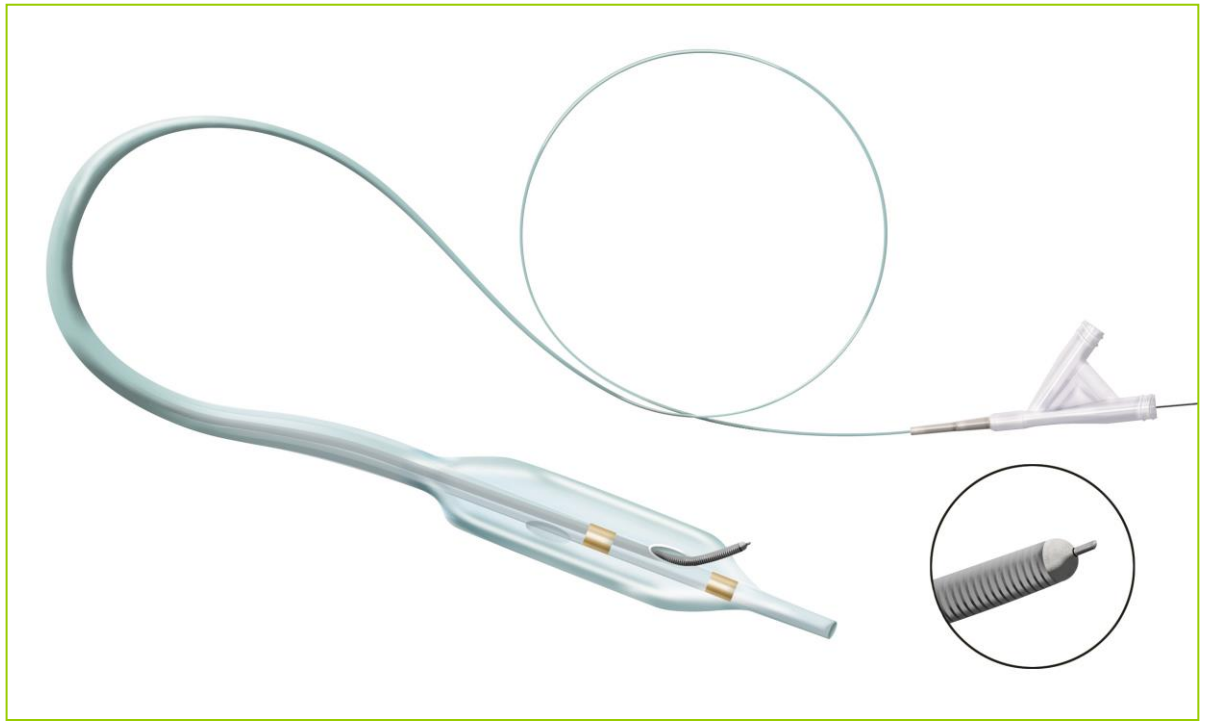


Antegrade dissection re-entry (ADR) system

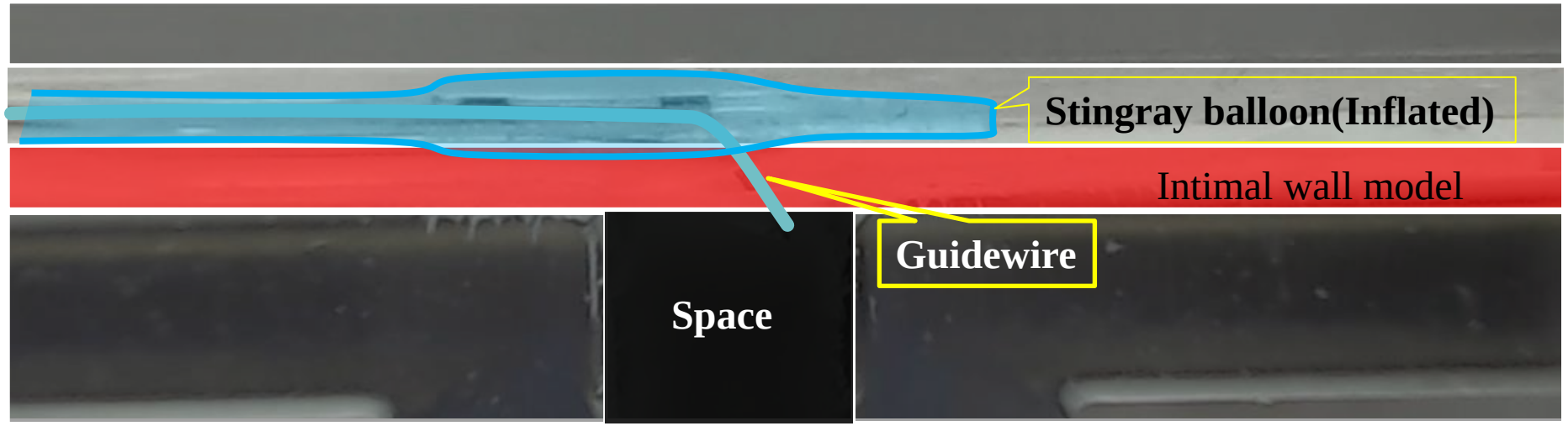
CrossBoss™ Catheter

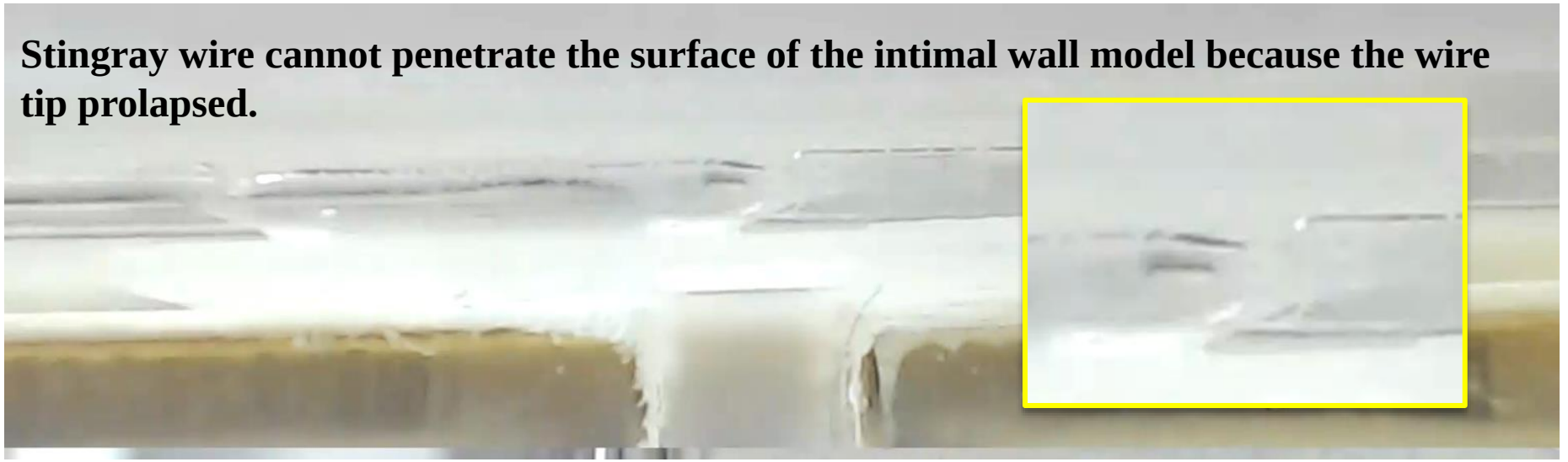


Stingray™ Catheter



Limitation of the re-entry procedure

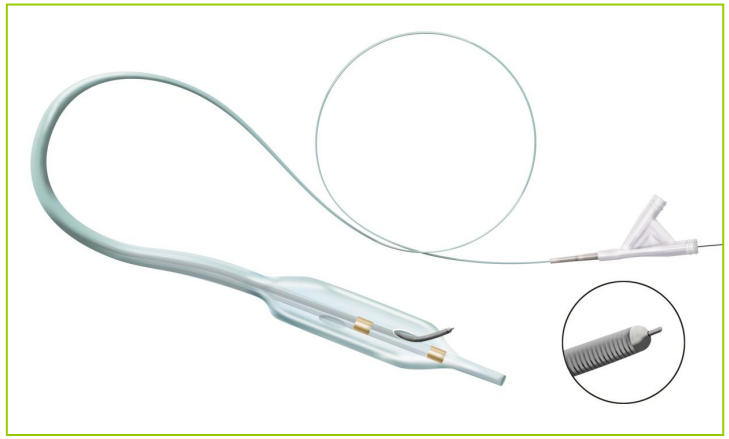




Penetration test with Stingray wire

Transition of Re-entry procedure in Japan

April. 2017 – June.2018

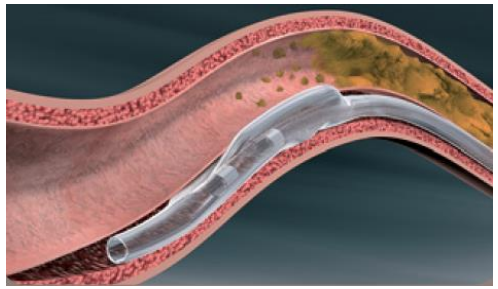


Stingray system

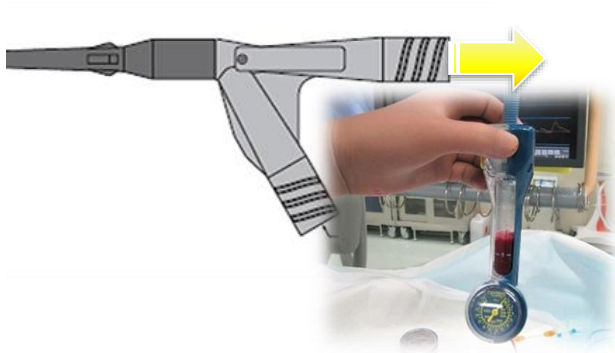
Straw technique with microcatheter

June.2018 – April. 2019

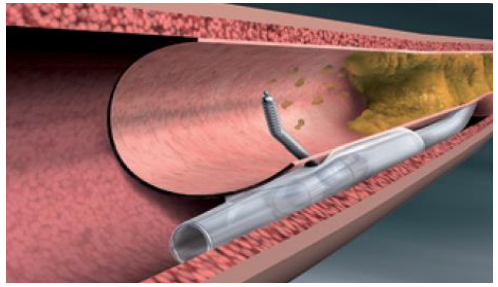
1. **Locate** and **inflate** Stingray balloon at the optimal puncture site



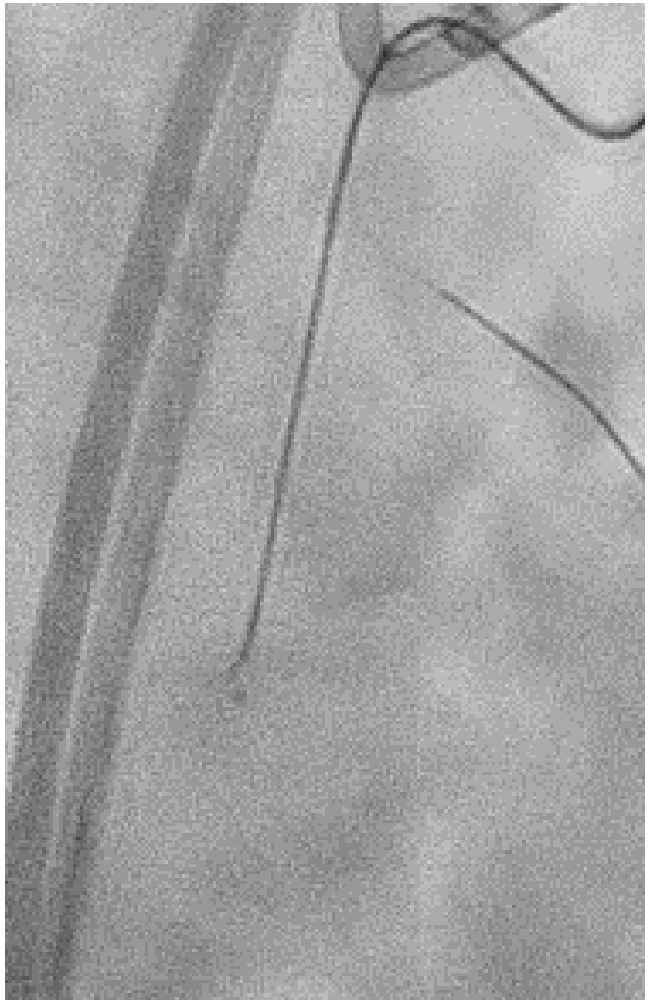
2. Attach **indeflator** to GW lumen of Stingray to **aspirate possible hematoma for 4 min.**



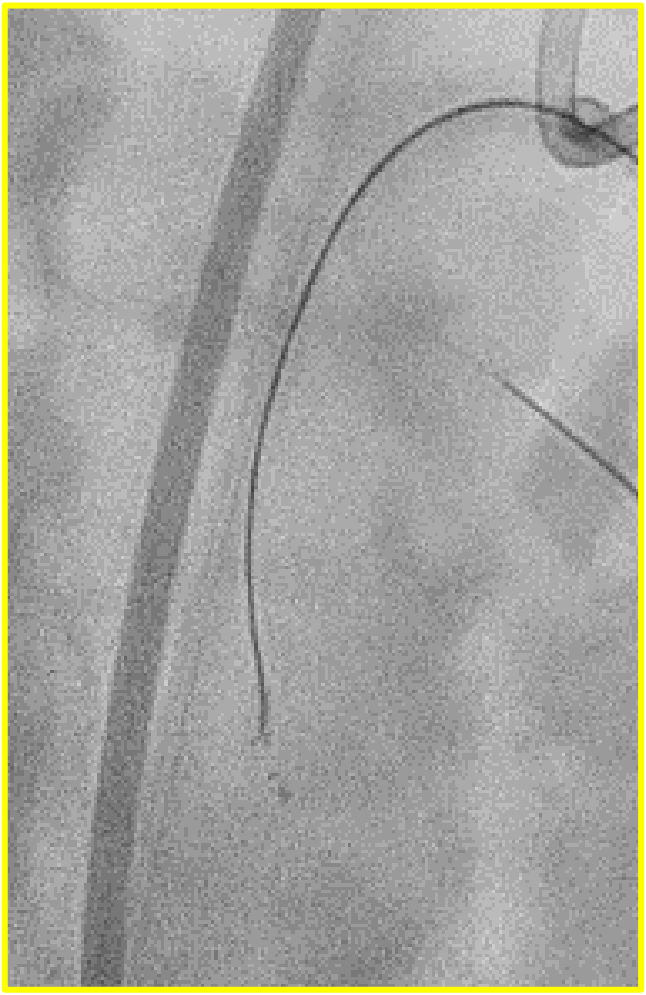
3. Attempt **puncture** with **Conquest Pro8-20**



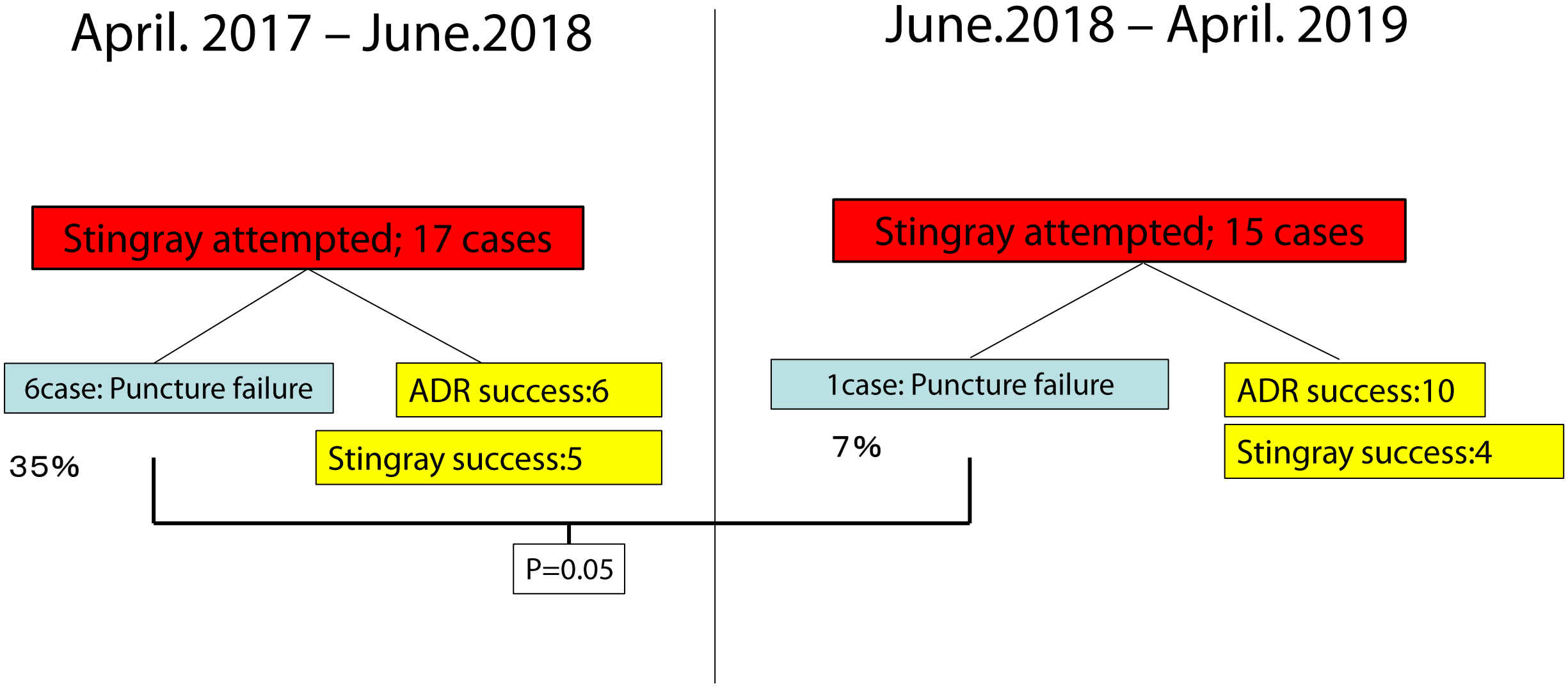
Success and Failure mode for penetration



Failure



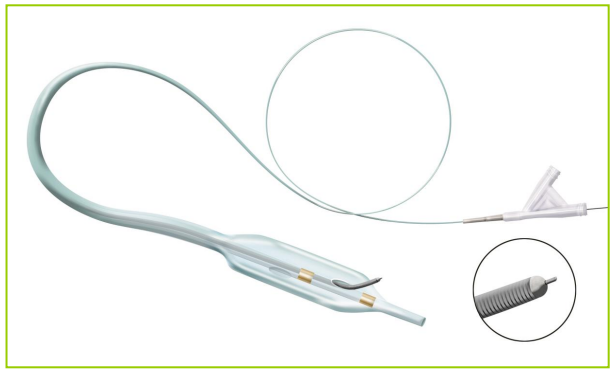
Success


April. 2017 – June.2018
June.2018 – April. 2019
Stingray attempted; 17 cases
6case: Puncture failure
ADR success:6
Stingray success:5
35%
Stingray attempted; 15 cases
1case: Puncture failure
ADR success:10
Stingray success:4
7%
P=0.05

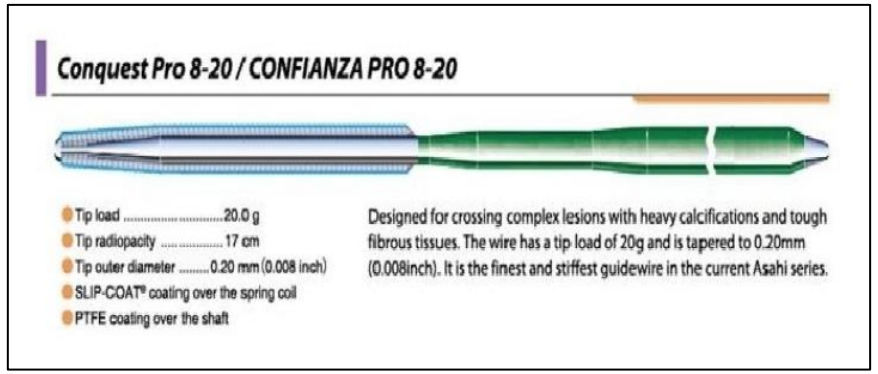
April. 2017 – June.2018

July. 2018 – June.2021

July. 2021-



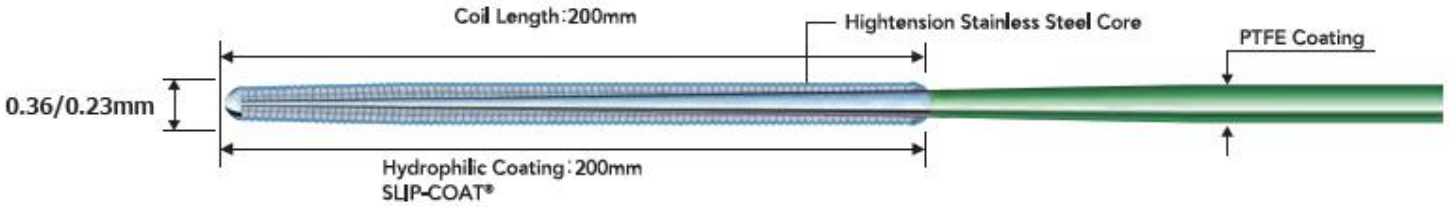
Stingray wire



Conquest pro12 ST

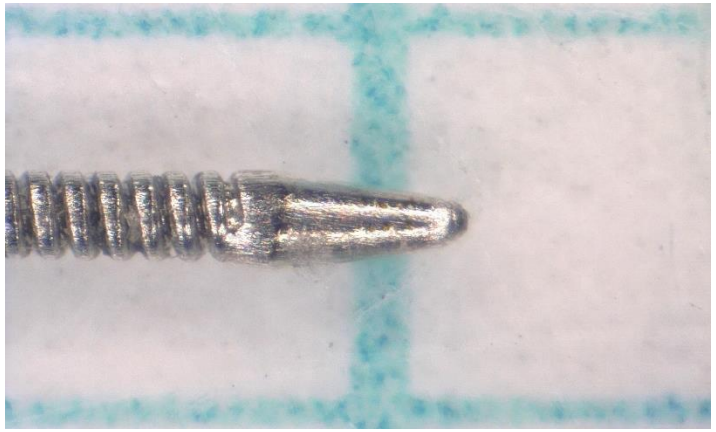
Conquest Pro12 ST (Sharpened-Tip)

Structure and Ordering Information



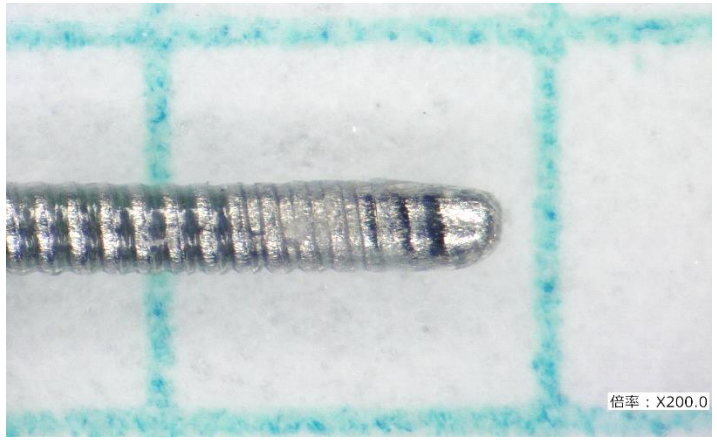
For more penetration force and efficacy
- ✓ **Micro cone** tip design
- ✓ Pre-shaped **1.2mm angle tip**
- ✓ **Non coating** on the ball tip

Conquest Pro12ST



Micro cone tip

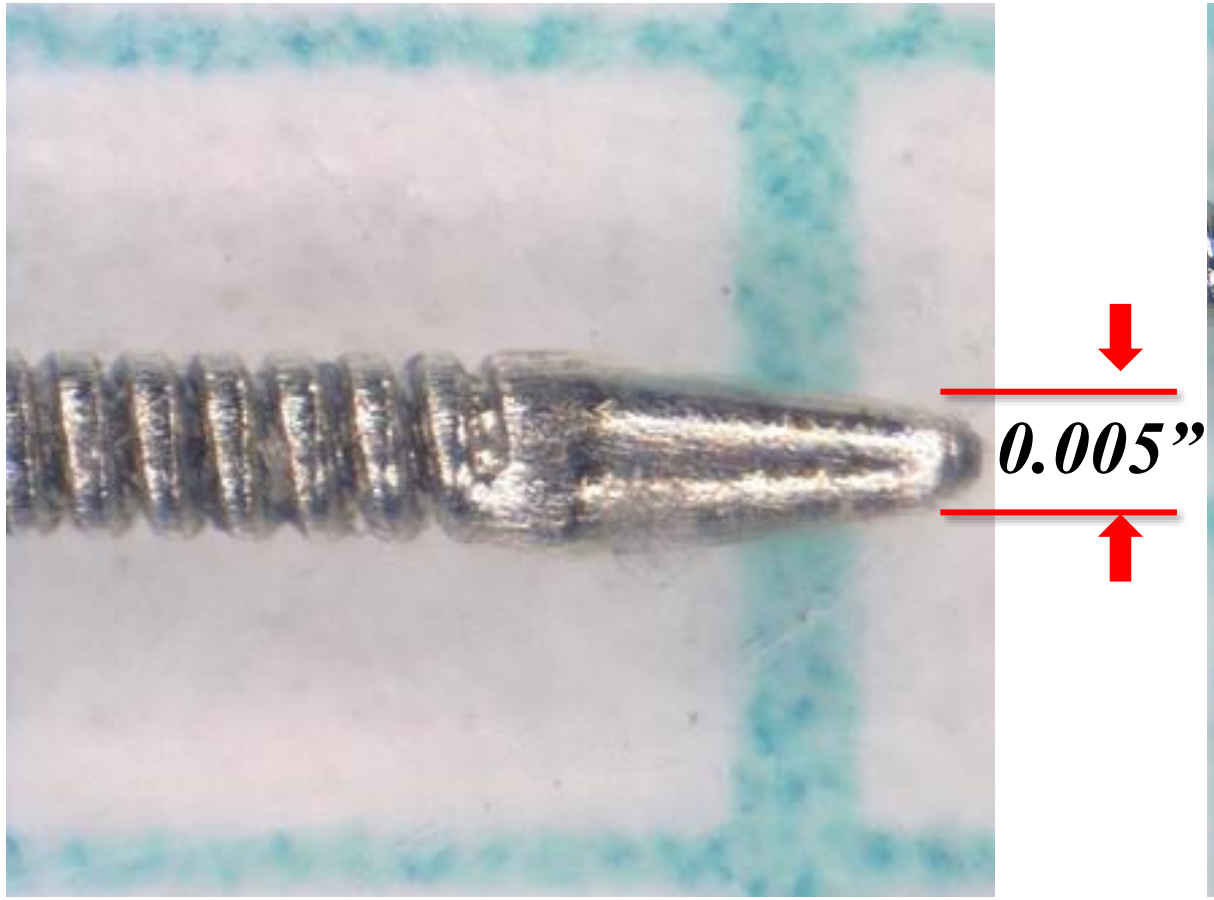
Conquest Pro12

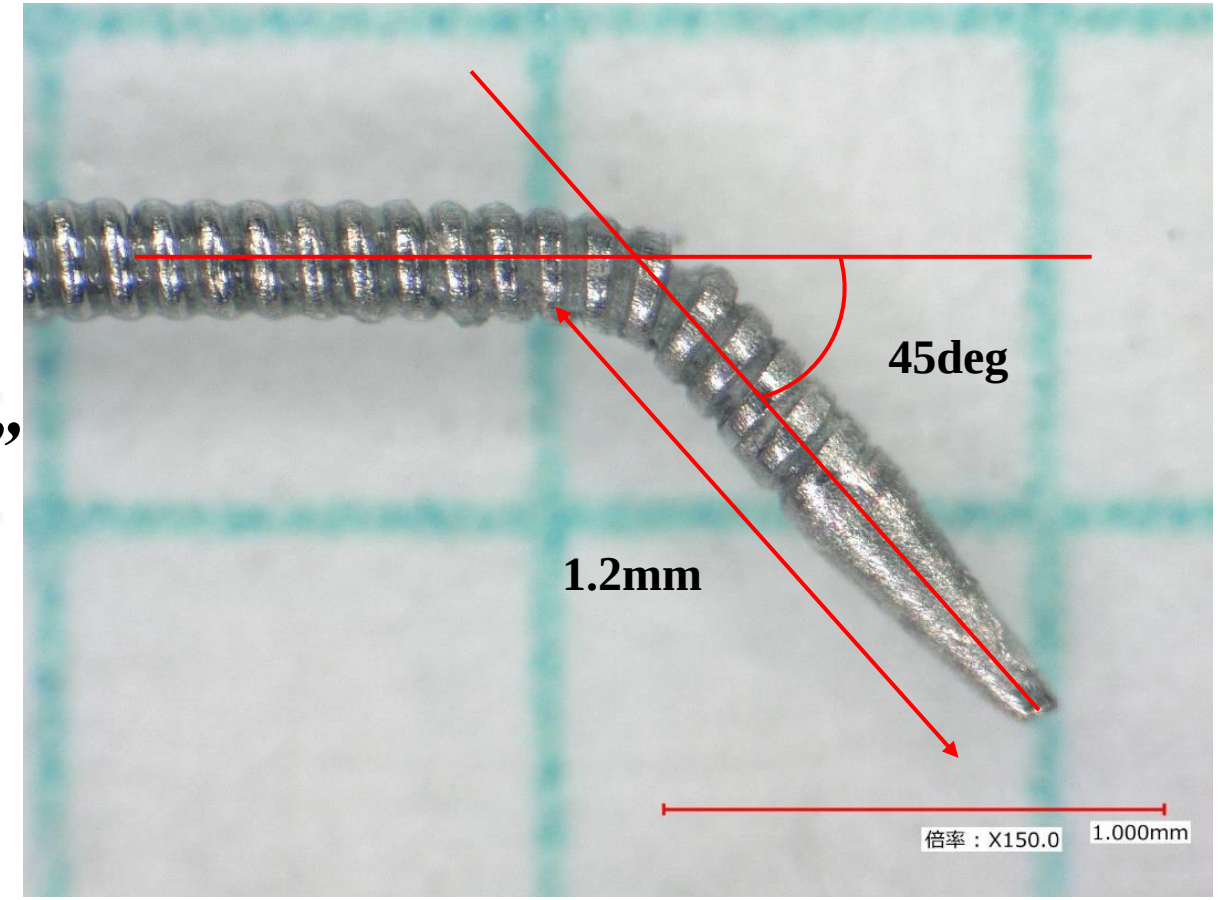


Round tip

ADR wire

The Micro cone tip and Pre-shaped angle tip of CP12ST



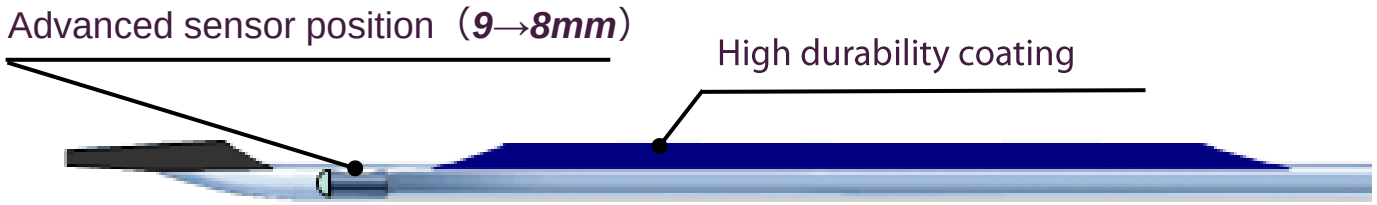


Product Specifications

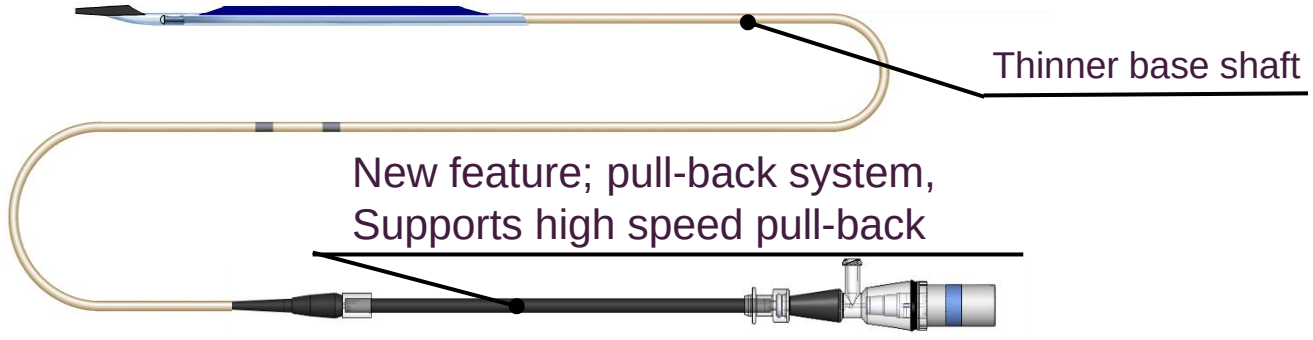
AnteOwl WR™

- Expanding the selection of combined devices by **reducing the diameter of the base shaft**
- Reduces stress on coronary artery by **advancing the sensor position**
- **pull-back system** enables search for entry points
- **Durable coating** enables stable multiple use

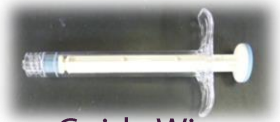
Enlarged view



Overall view



2.5mL Angio syringe



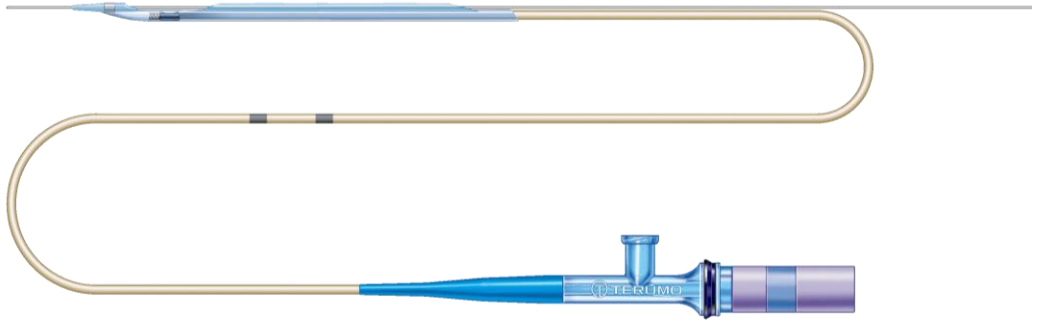
Guide Wire Insertion jig

Comparison of Navifocus WR and AnteOwl WR

AnteOwl WR™

AnteOwl WR: “Navigation IVUS” specialized for complex lesions

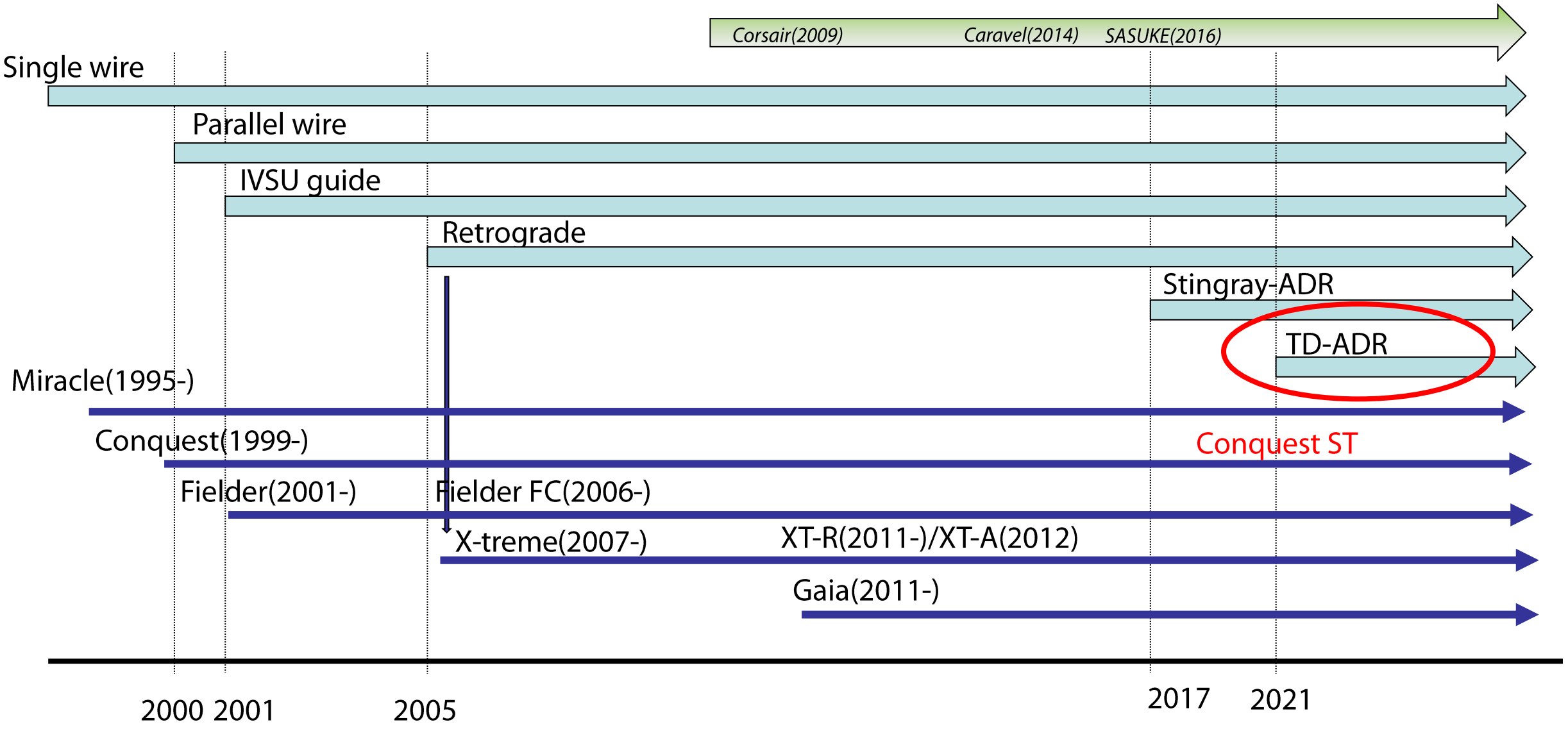
AnteOwl WR™



Navifocus® WR

	Outside diameter of the window (mm)	Outside diameter of the shaft (mm)	Sensor part (mm)	Length (cm)	Fraquency (MHz)	Speed of Pull-Back (mm/s)	Number of rotations (rpm)
Navifocus WR	0.83mm 2.5Fr.	1.06mm 3.2Fr.	9mm	154cm	40	Non	1,800
AnteOwl WR	**0.86mm 2.6Fr.**	**1.03mm 3.1Fr.**	**8mm**	**135cm**	40	**0.5 - 9.0 (changeable)**	1,800 - **5,400**

History of CTO technique in Japan

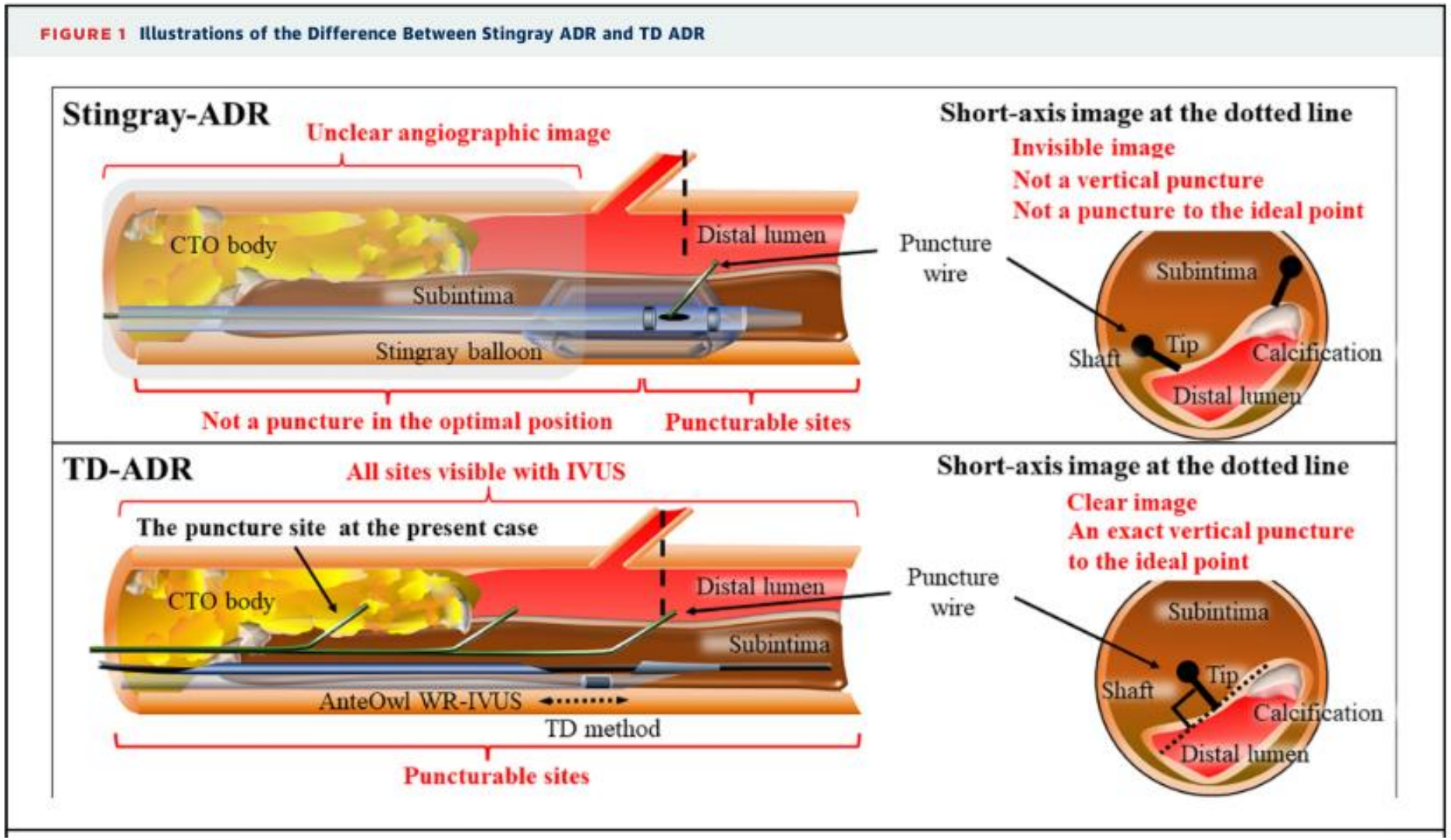


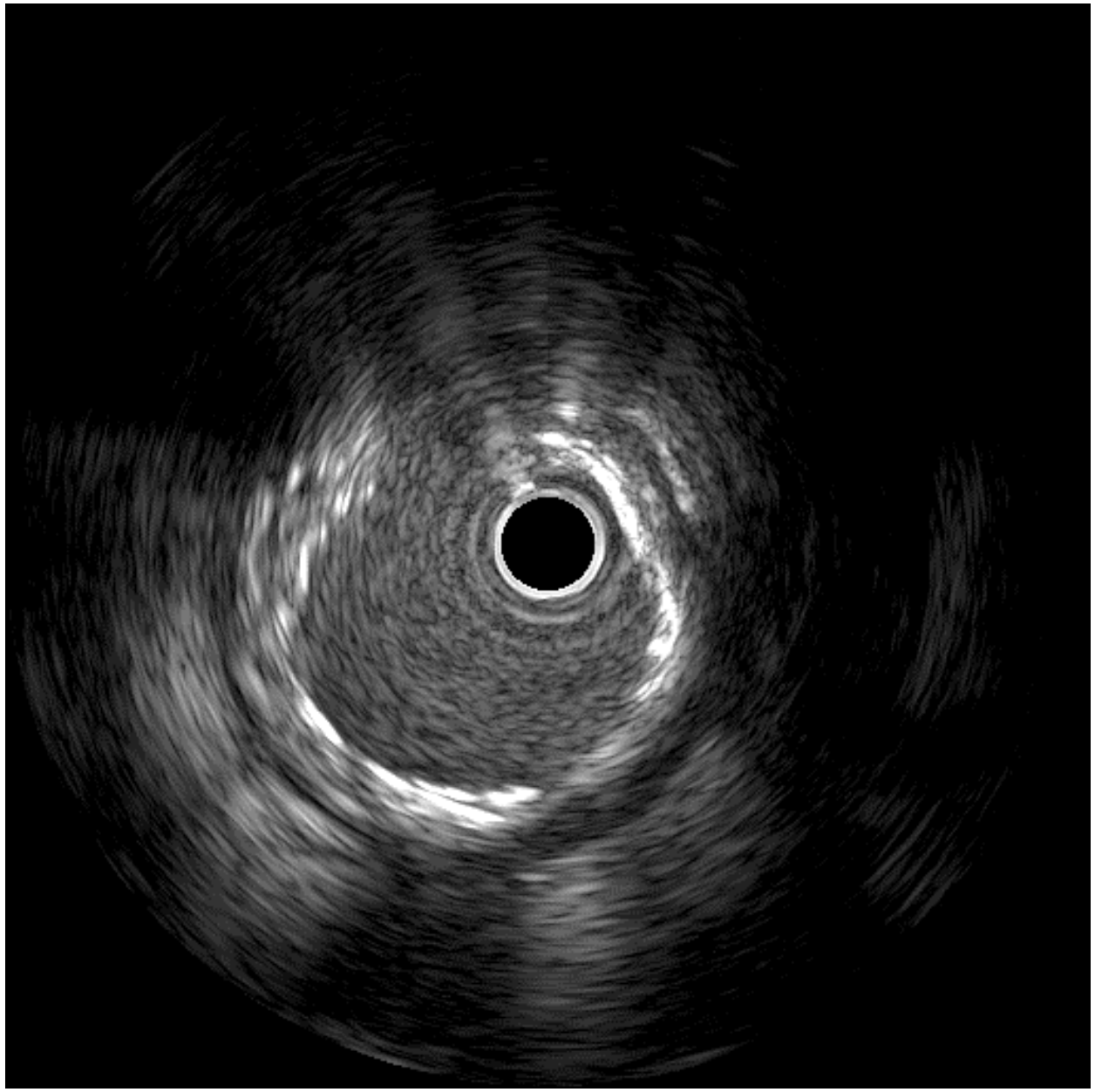
New Antegrade Dissection Re-Entry Technique With Tip Detection Method and New Puncture Wire in CTO-PCI

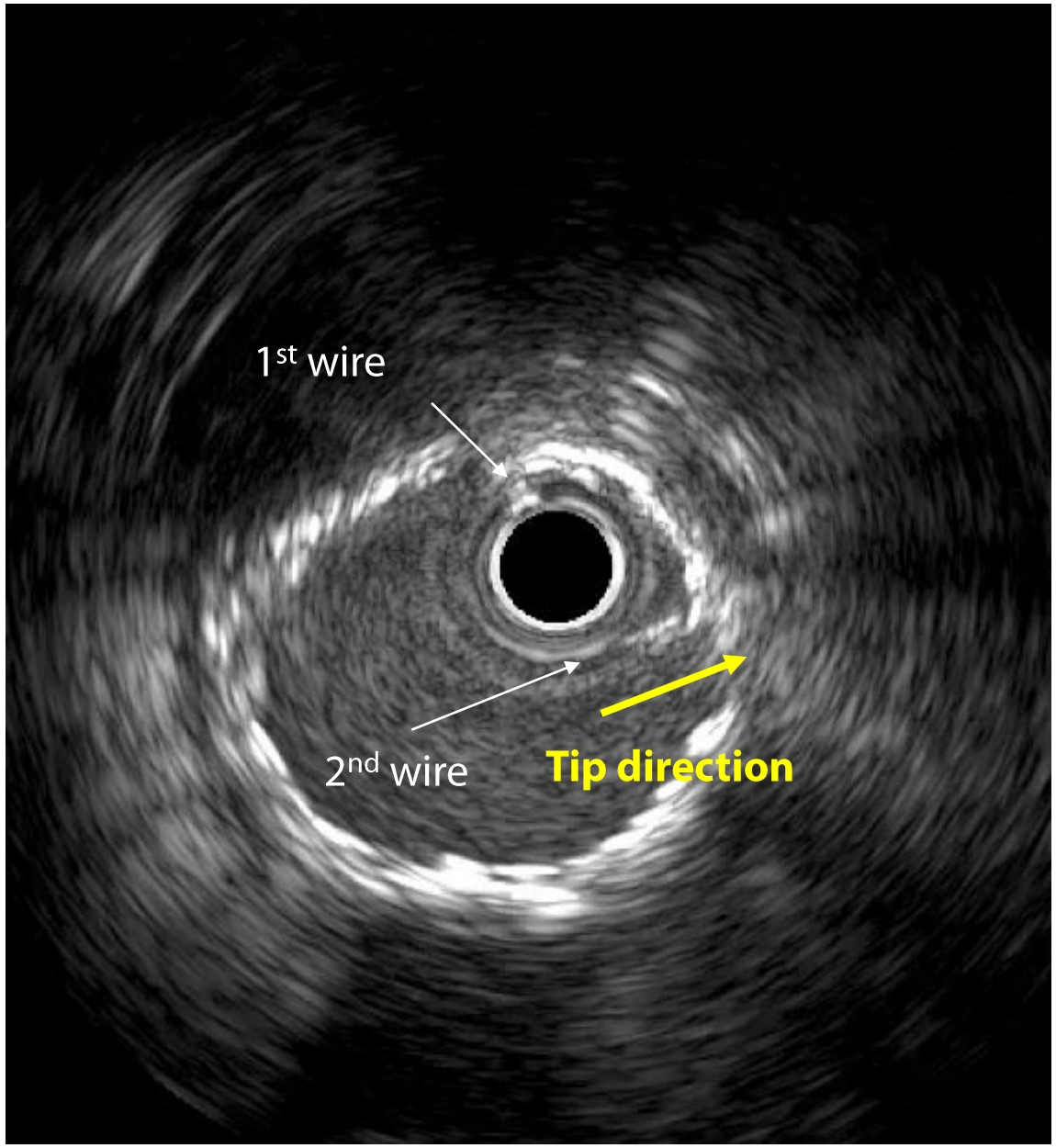
JACC:Cardiovasc interv:Vol16.N012.2023:1546-1548

Kota Tanaka, MD,[a] Atsunori Okamura, MD, PhD,[a] Etsuo Tsuchikane, MD, PhD,[b] Hiroaki Matsuda, MD,[c]

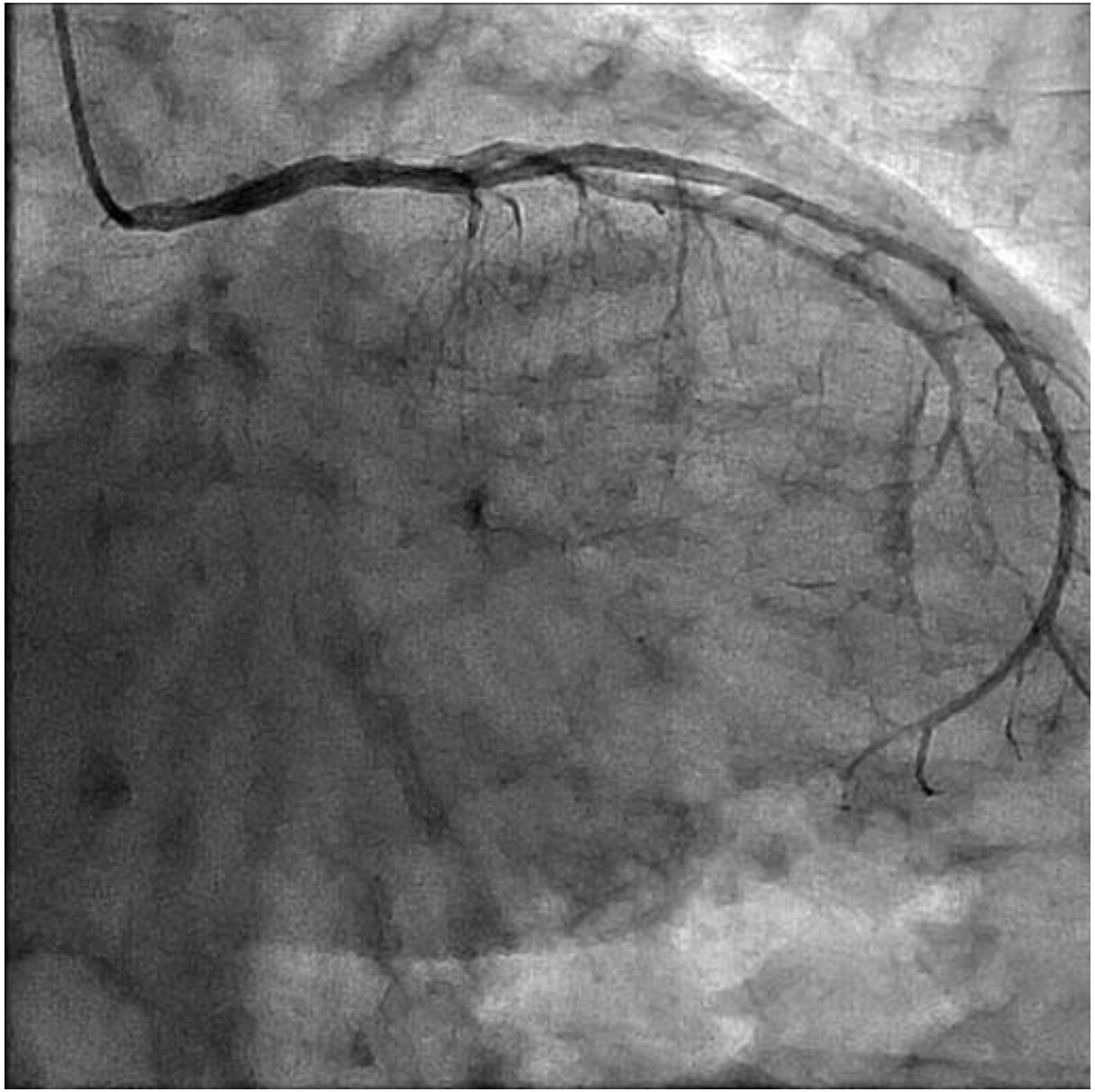
FIGURE 1 Illustrations of the Difference Between Stingray ADR and TD ADR

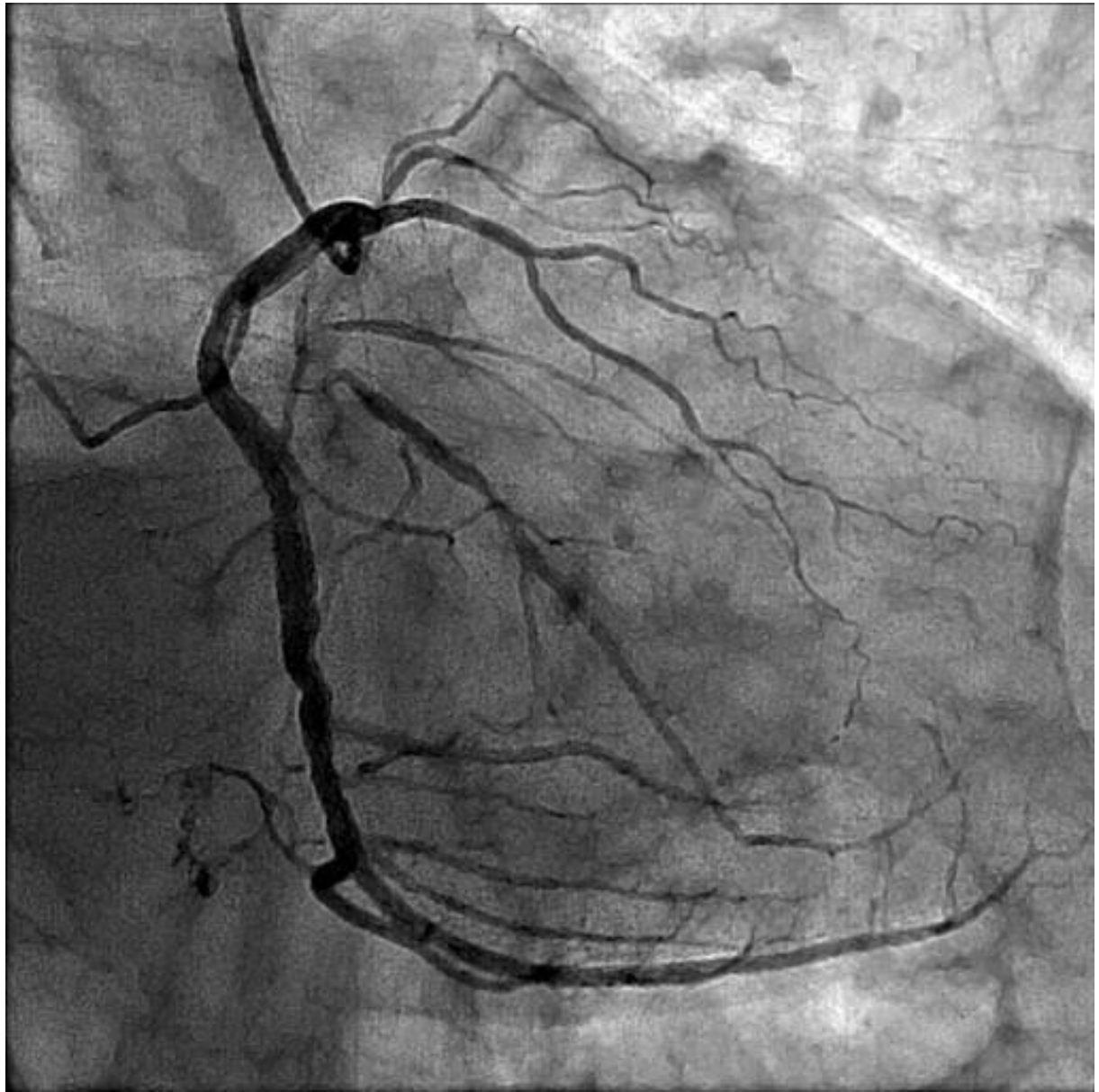


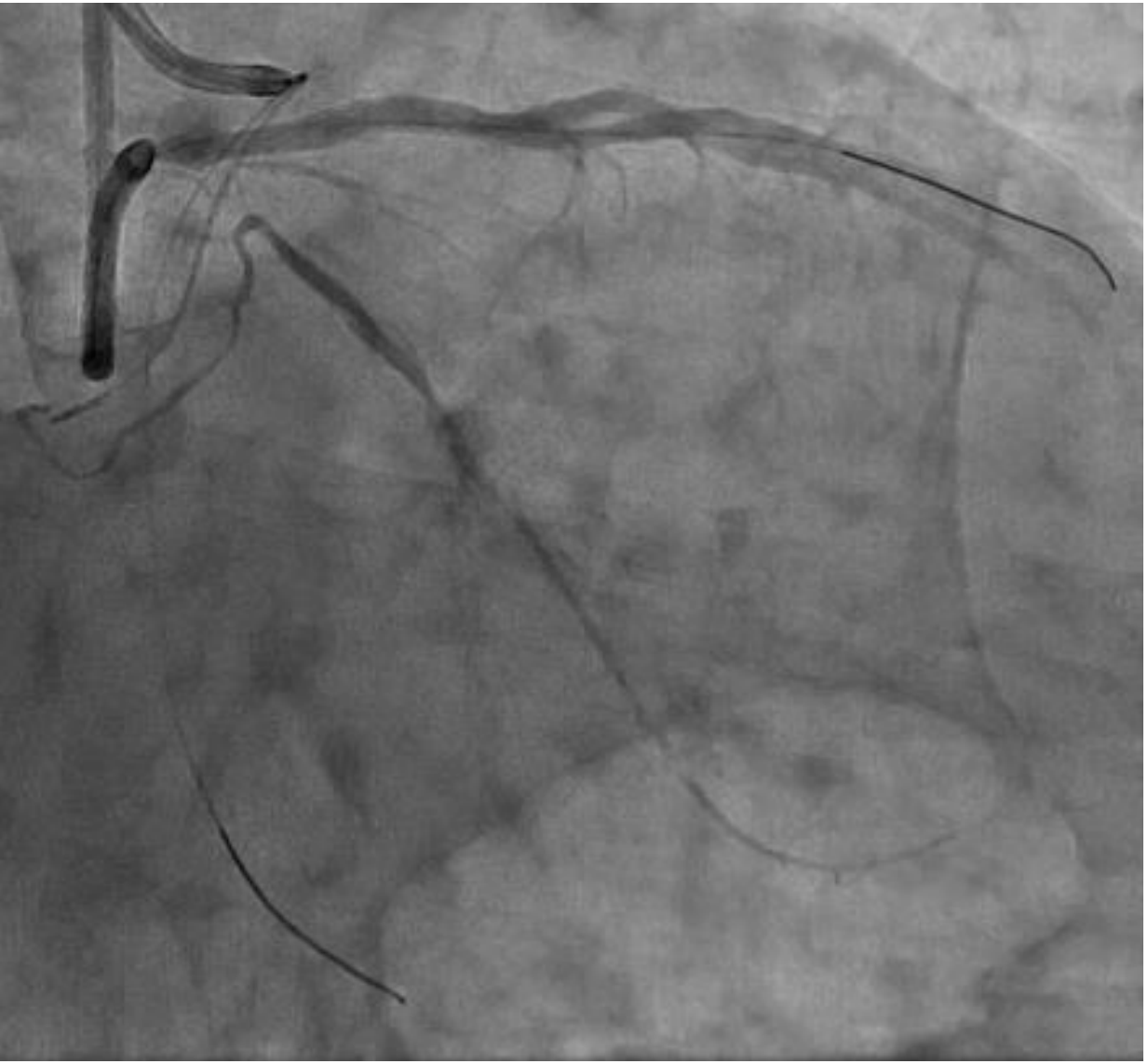


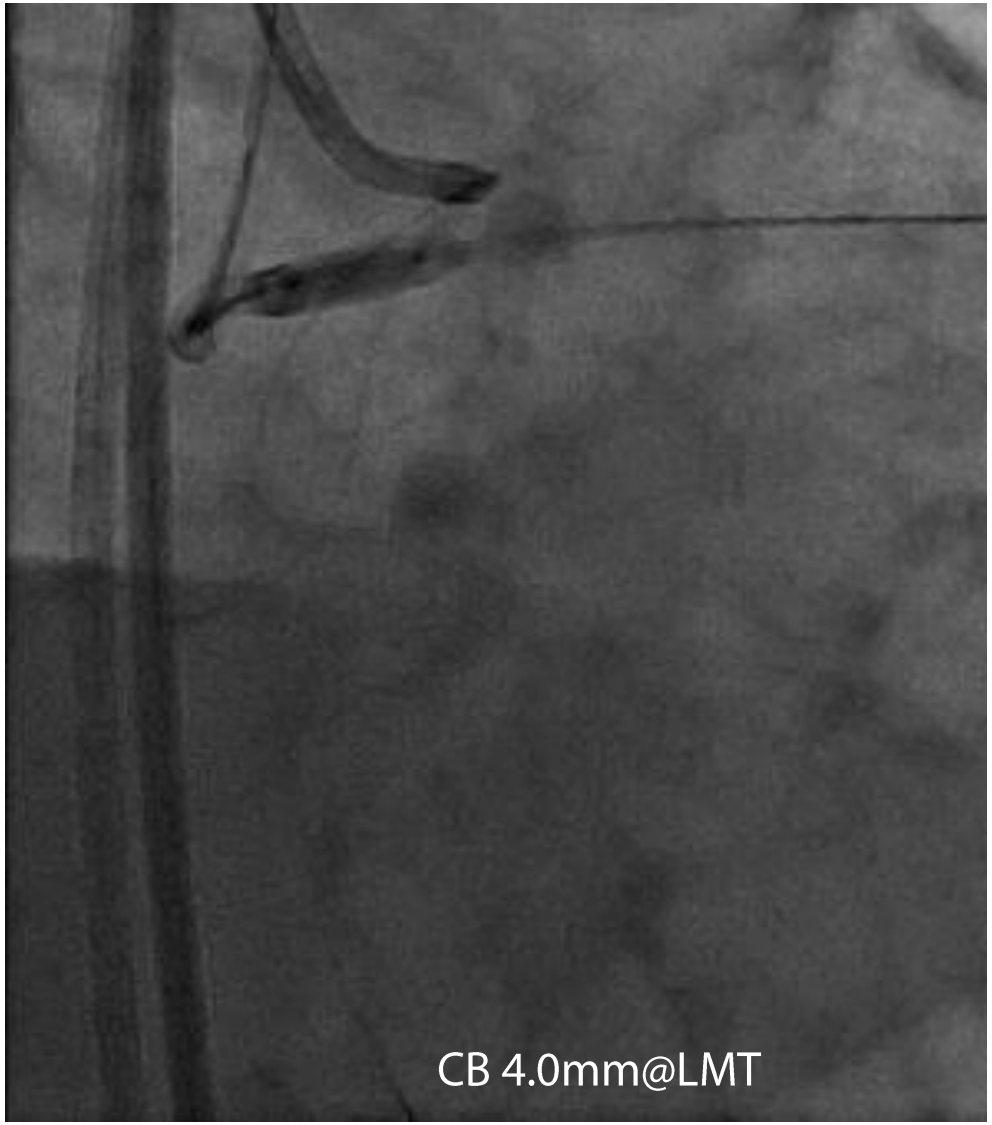

1st wire
2nd wire
Tip direction

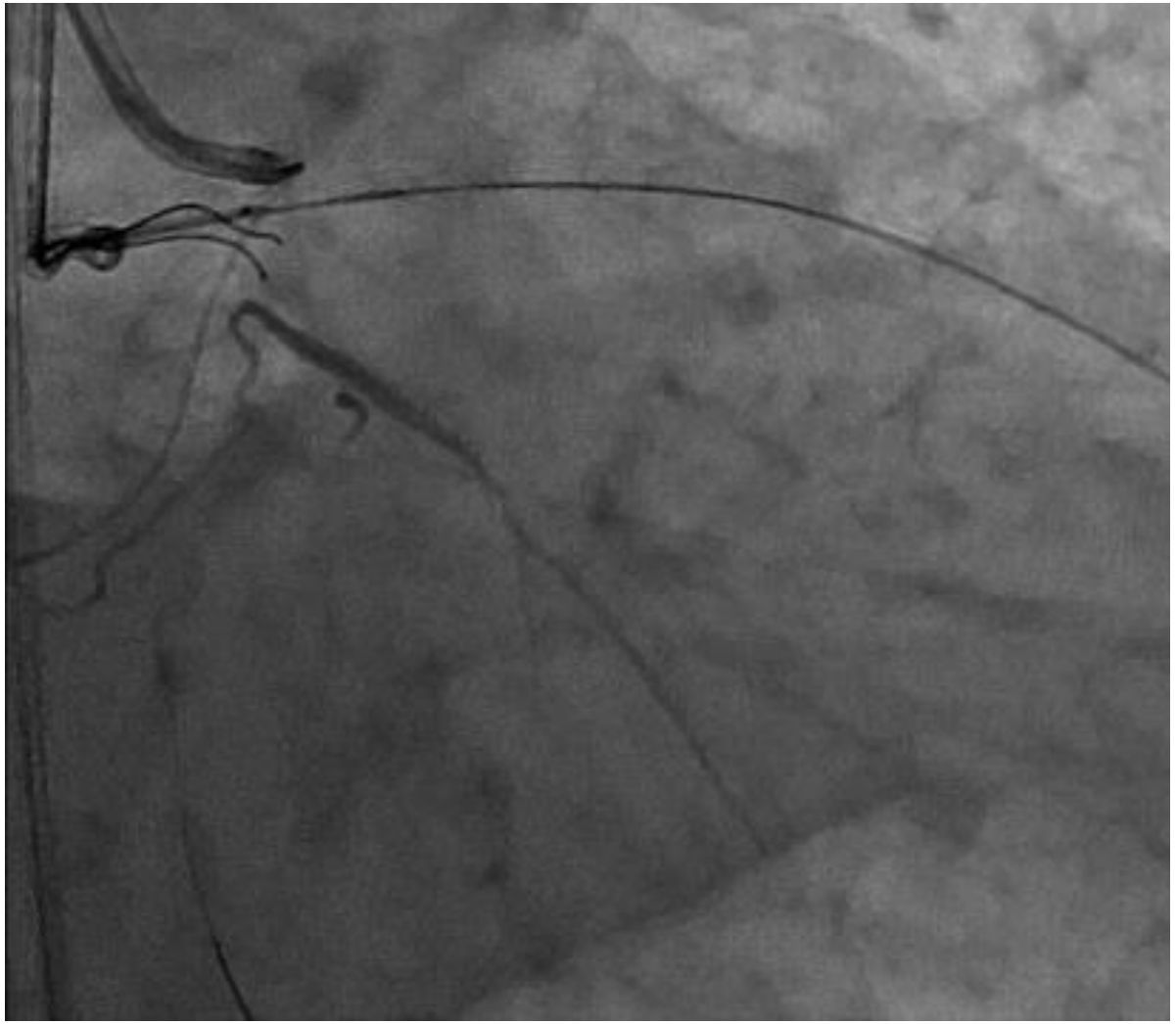
Case: LCX CTO



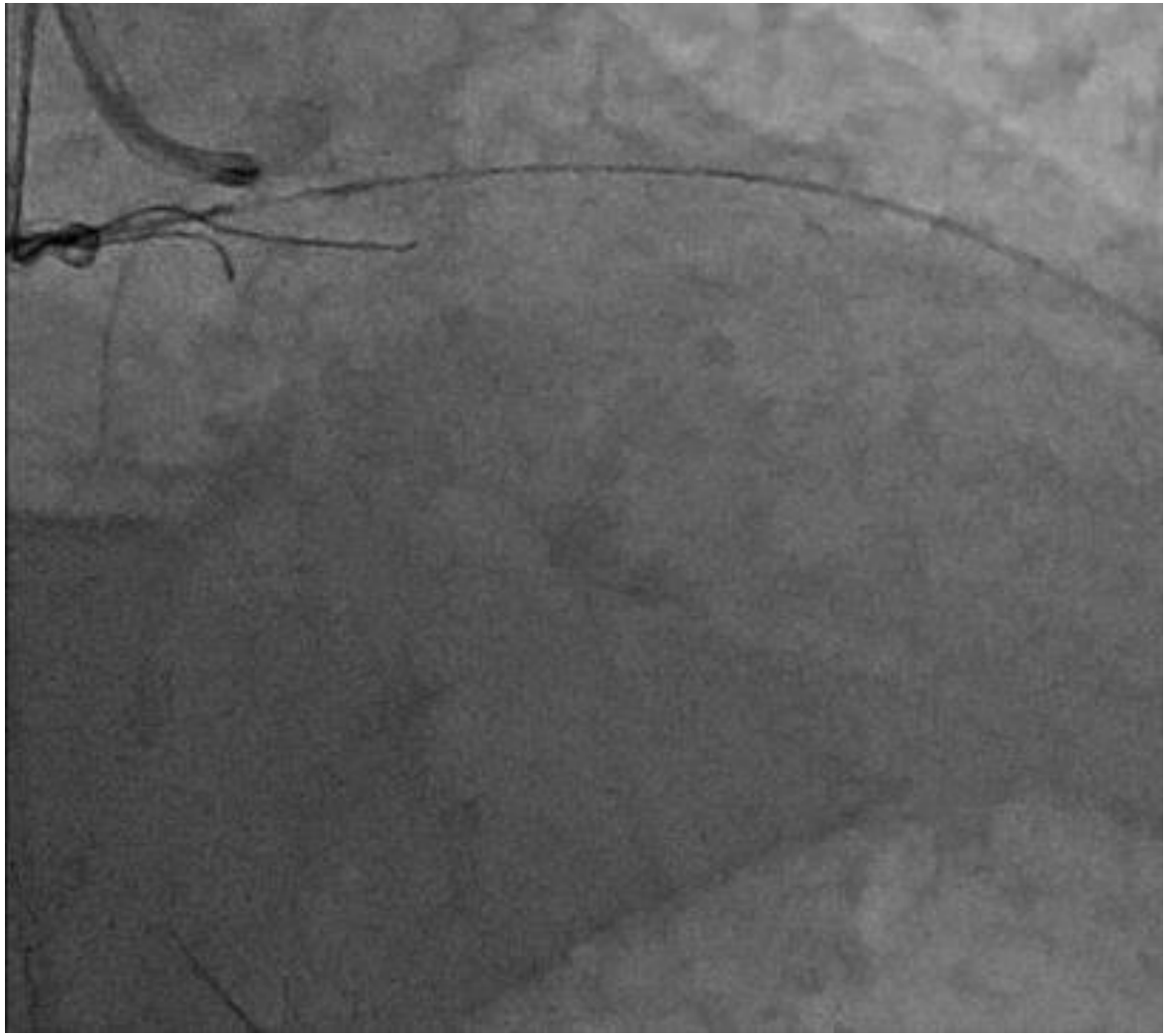




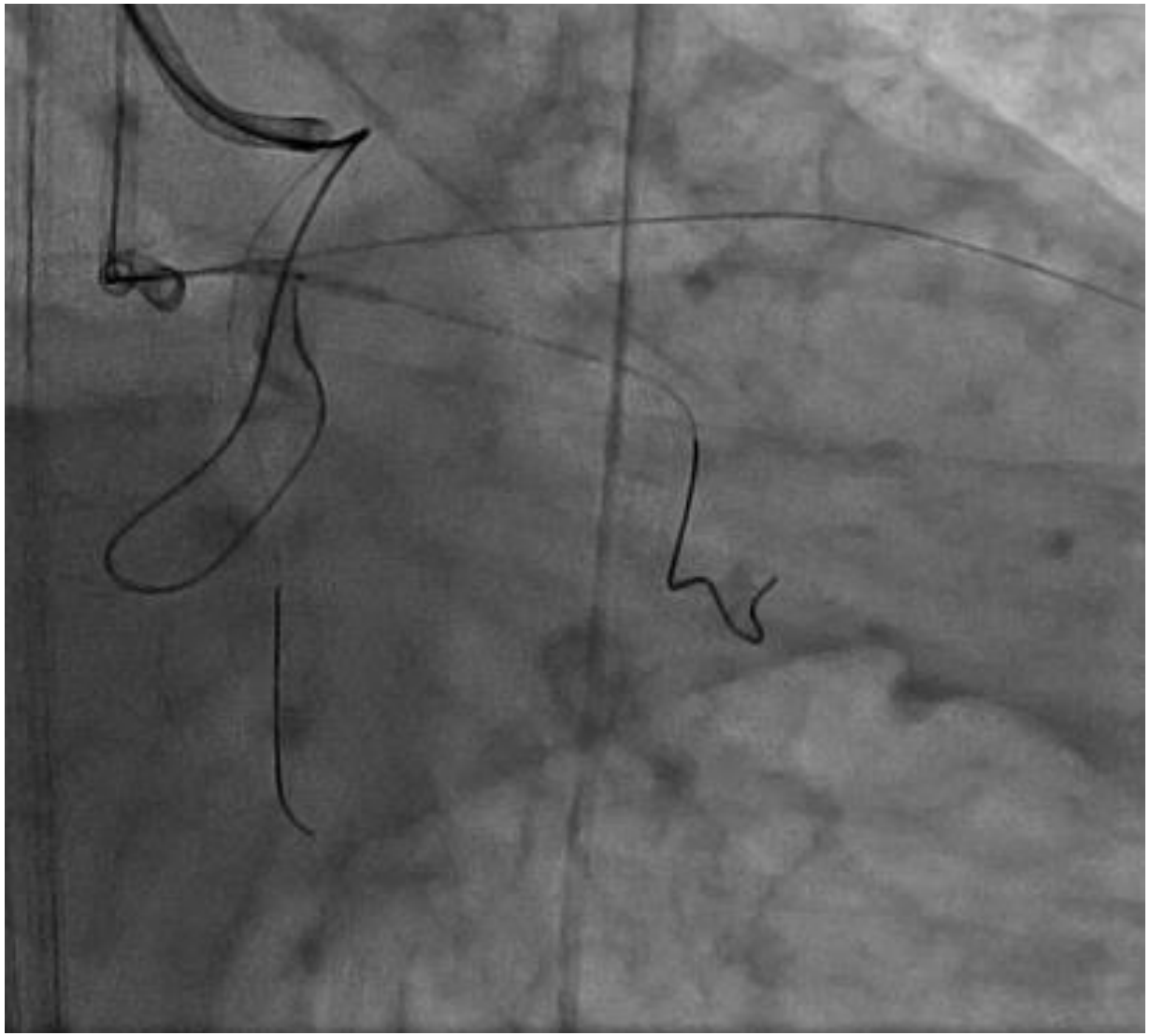

CB 4.0mm@LMT

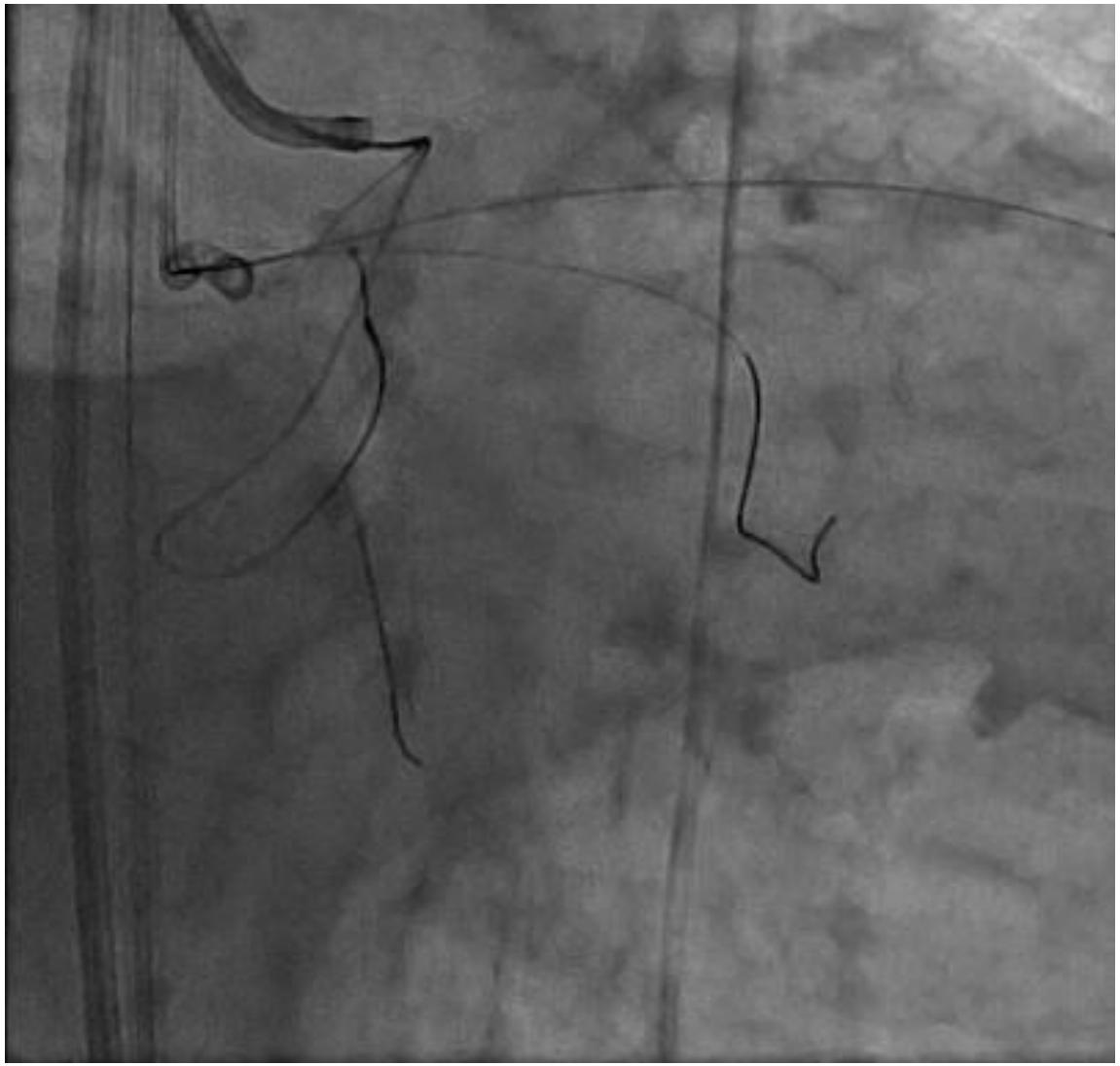


Antegrade wire escalation failed

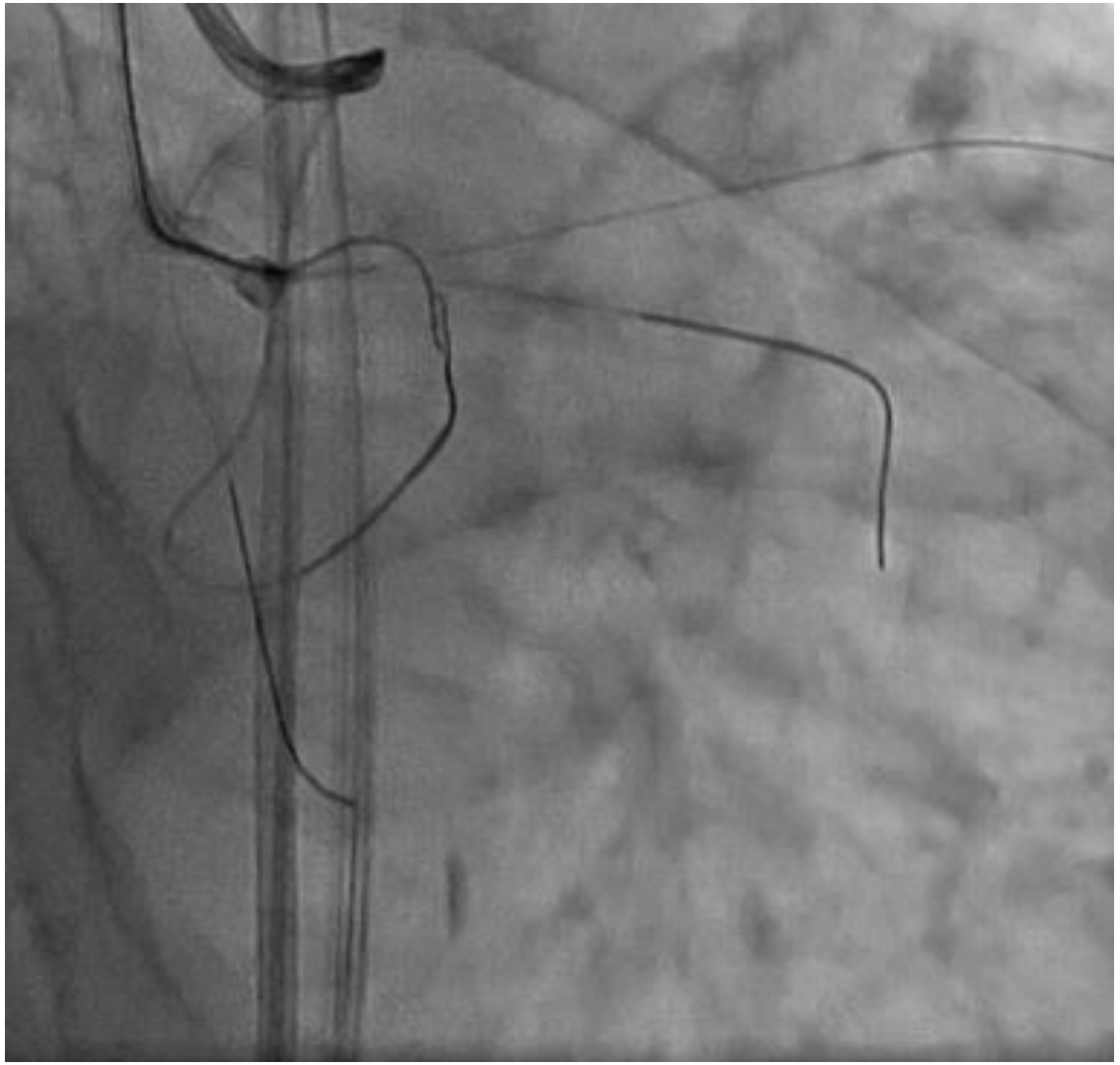


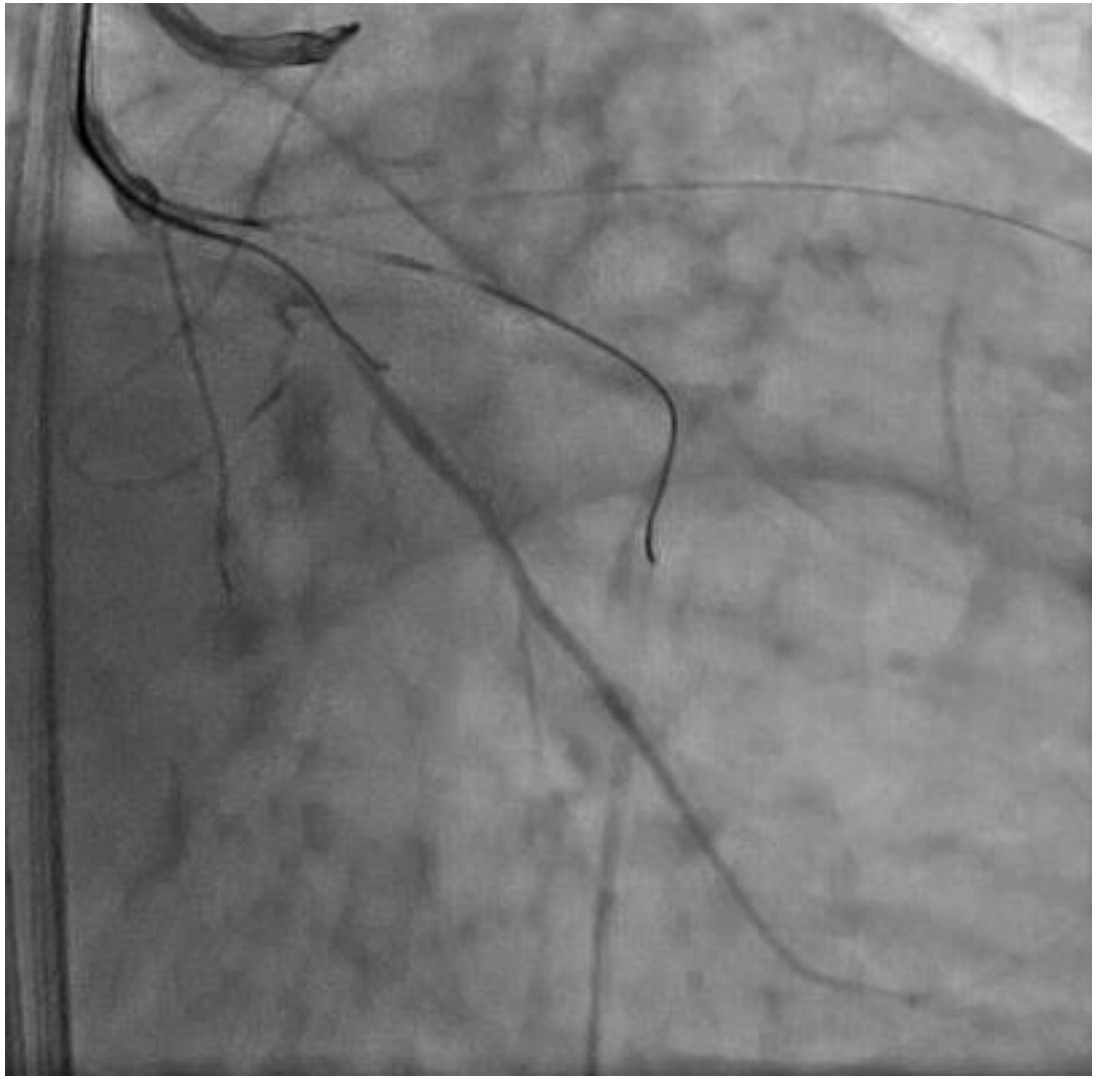
GN2 to Intermediate branch by IVUS guide



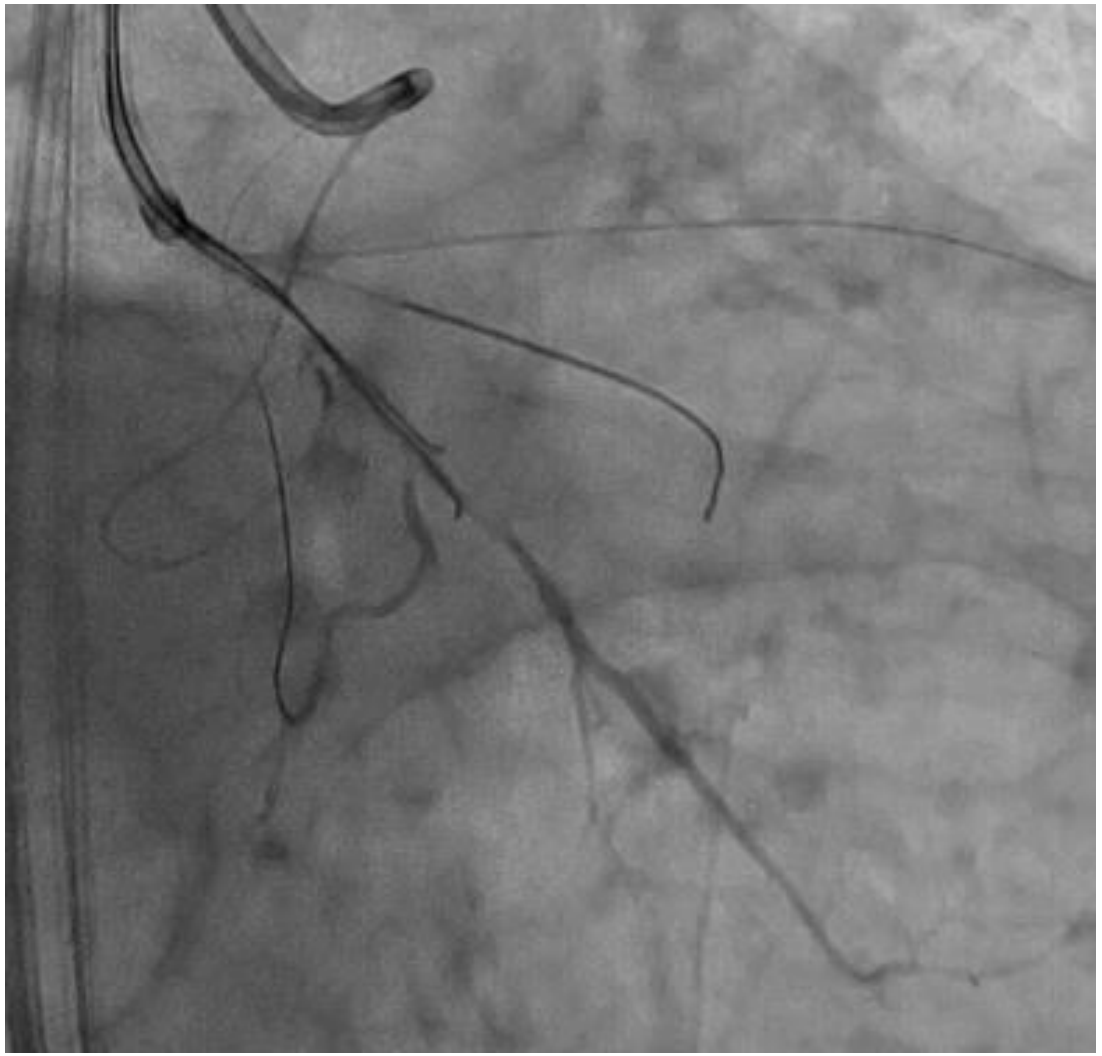


Retrograde procedure was also failed because retrograde wire prolapsed

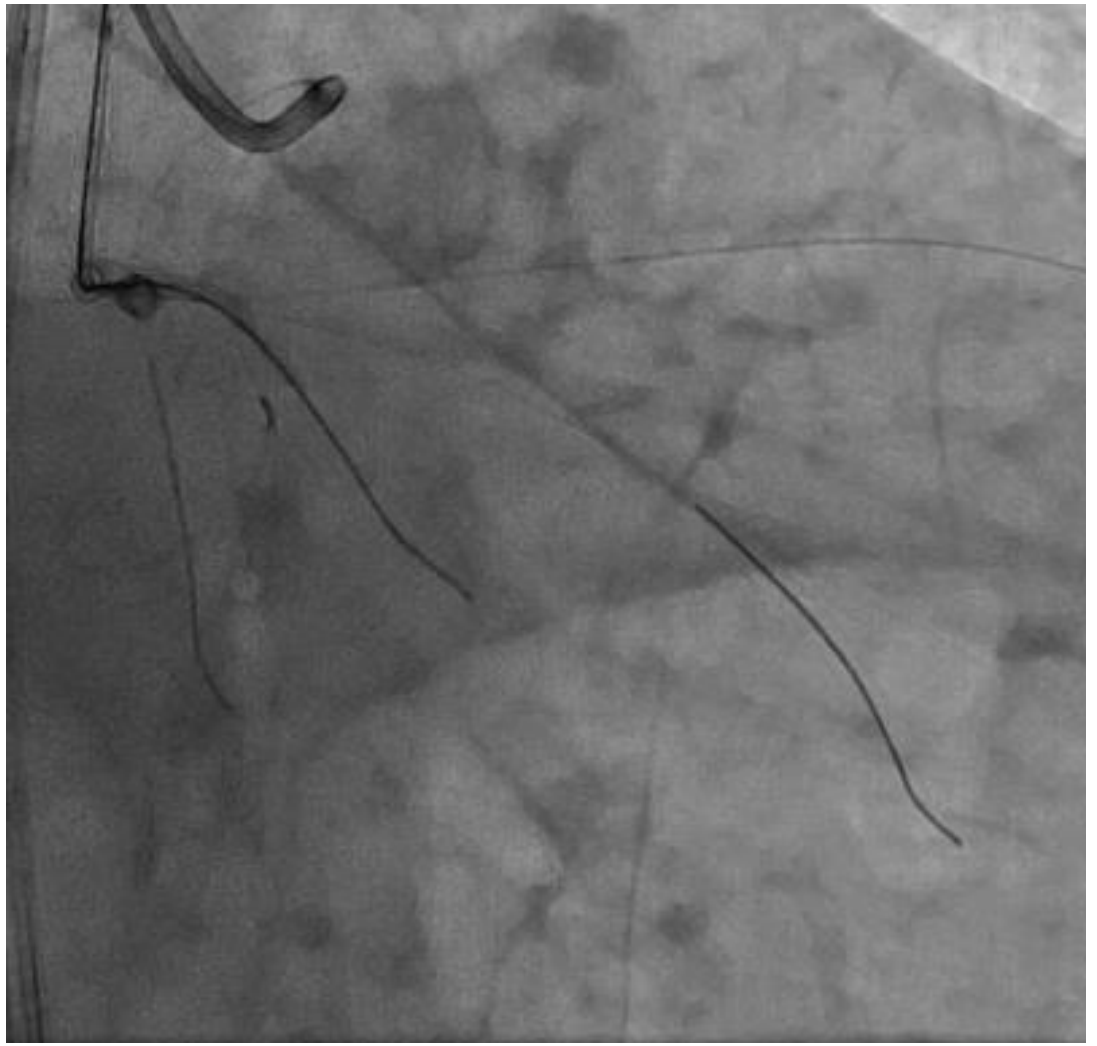




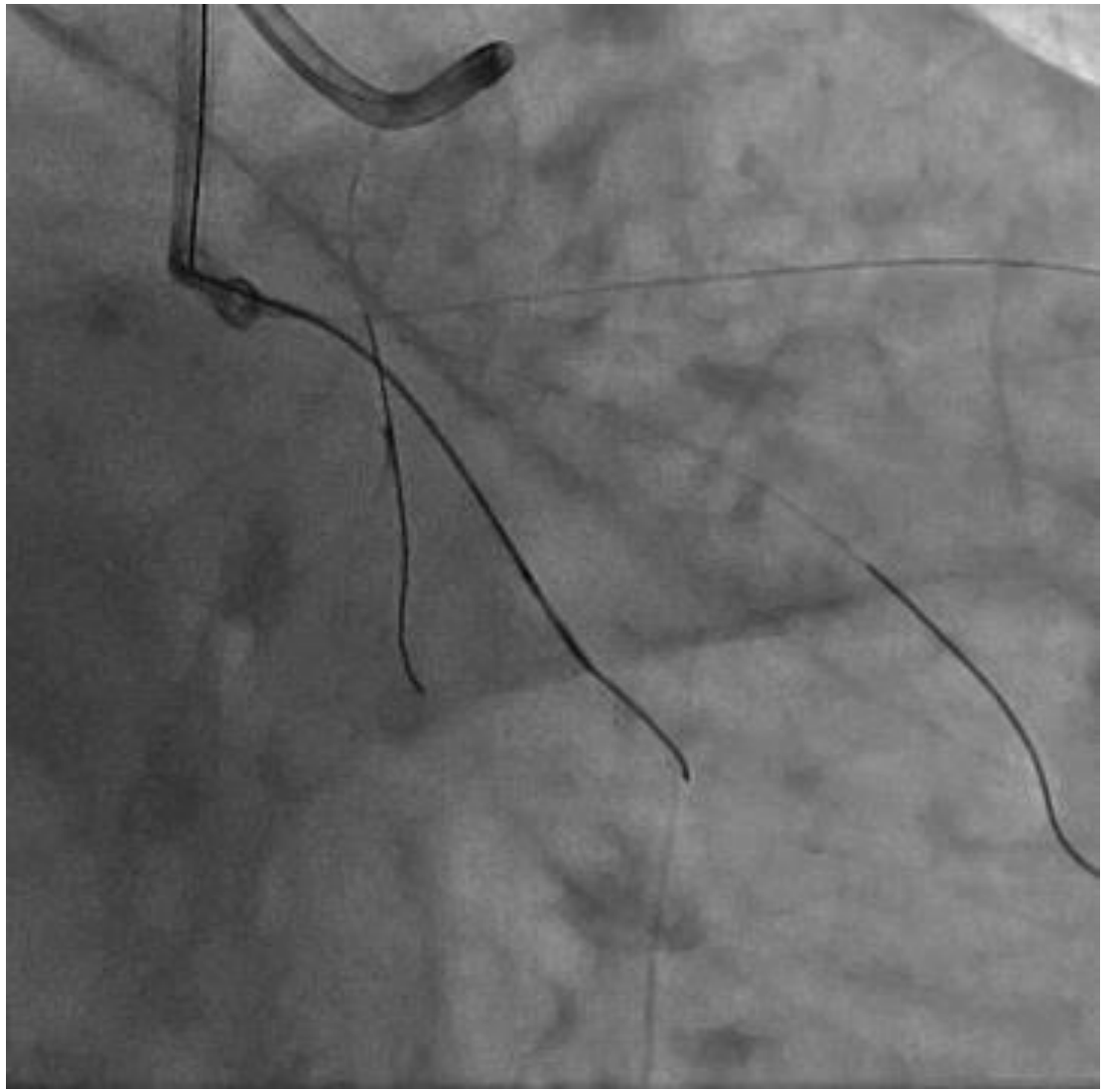
Antegrade wiring with retrograde marker wire

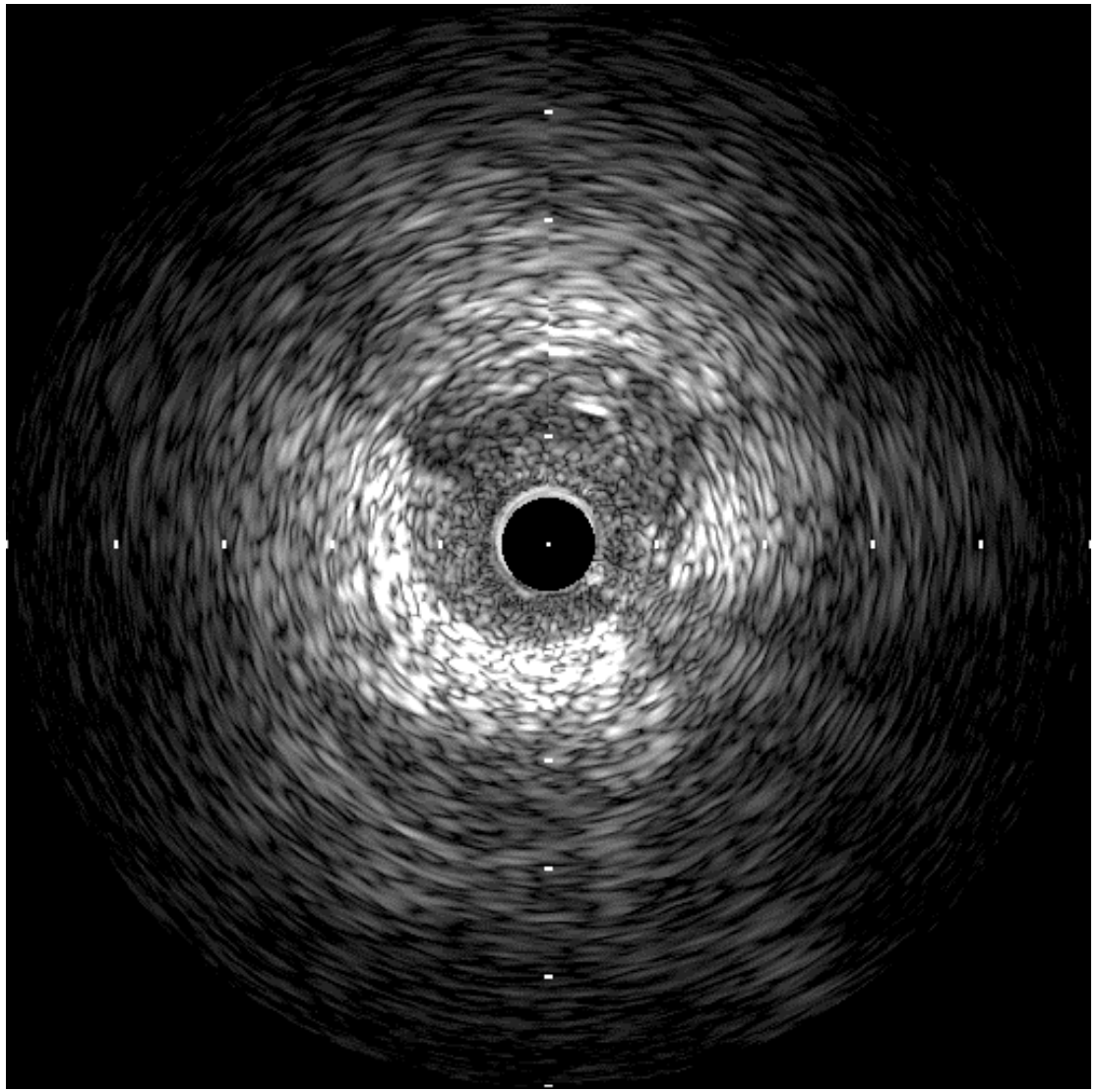


PWT was failed

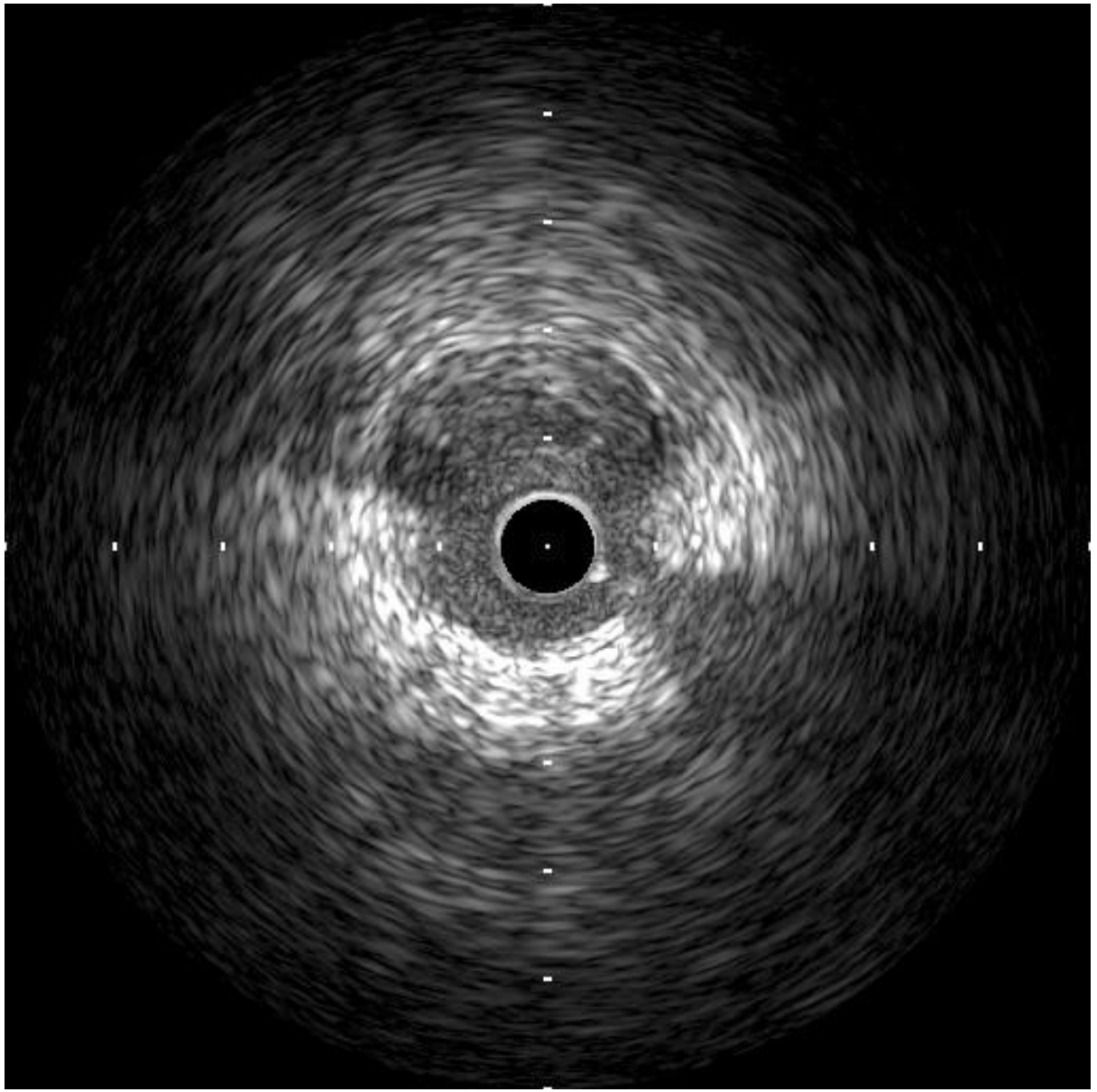


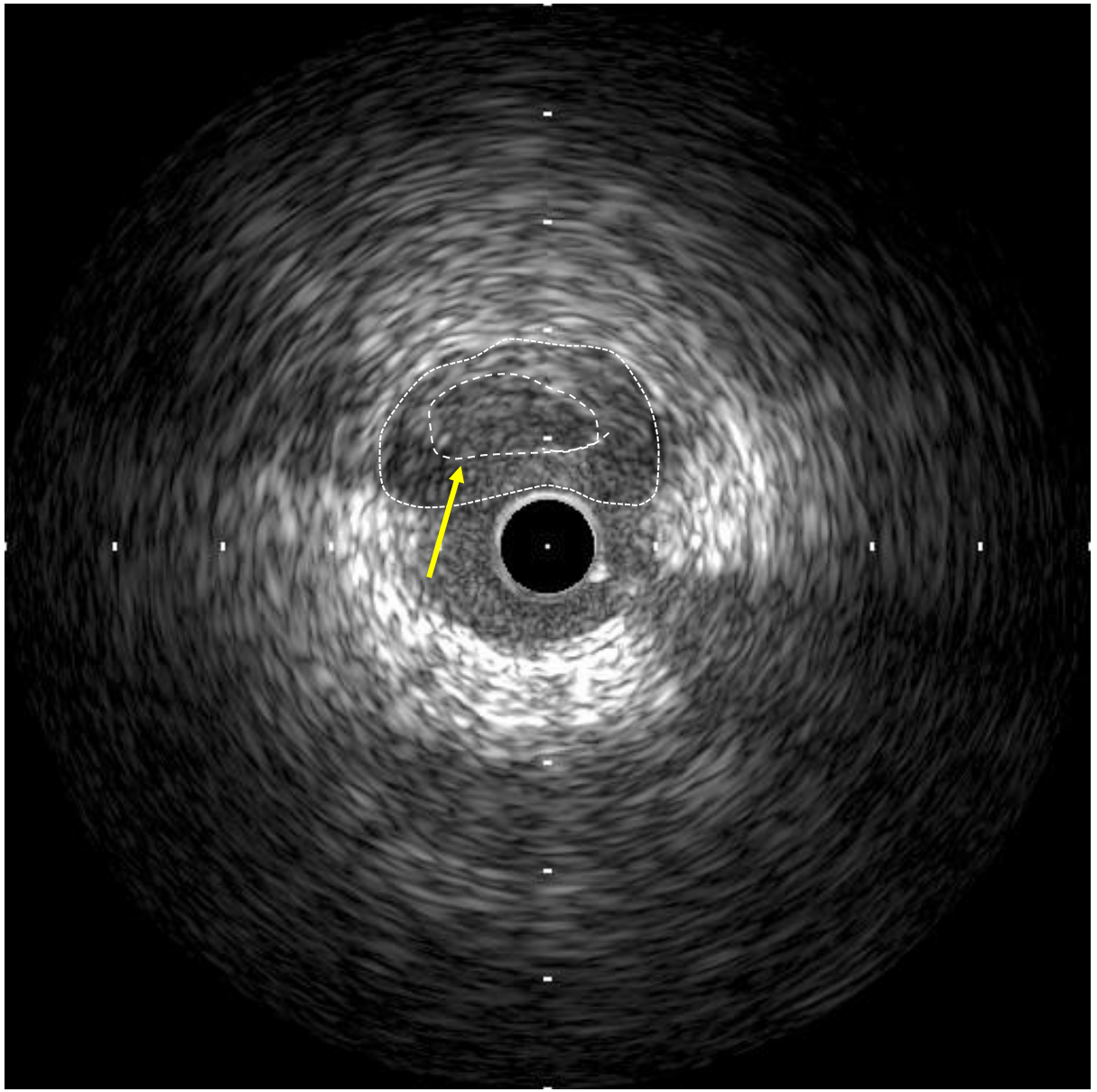
1.5mm POBA for IVUS guide

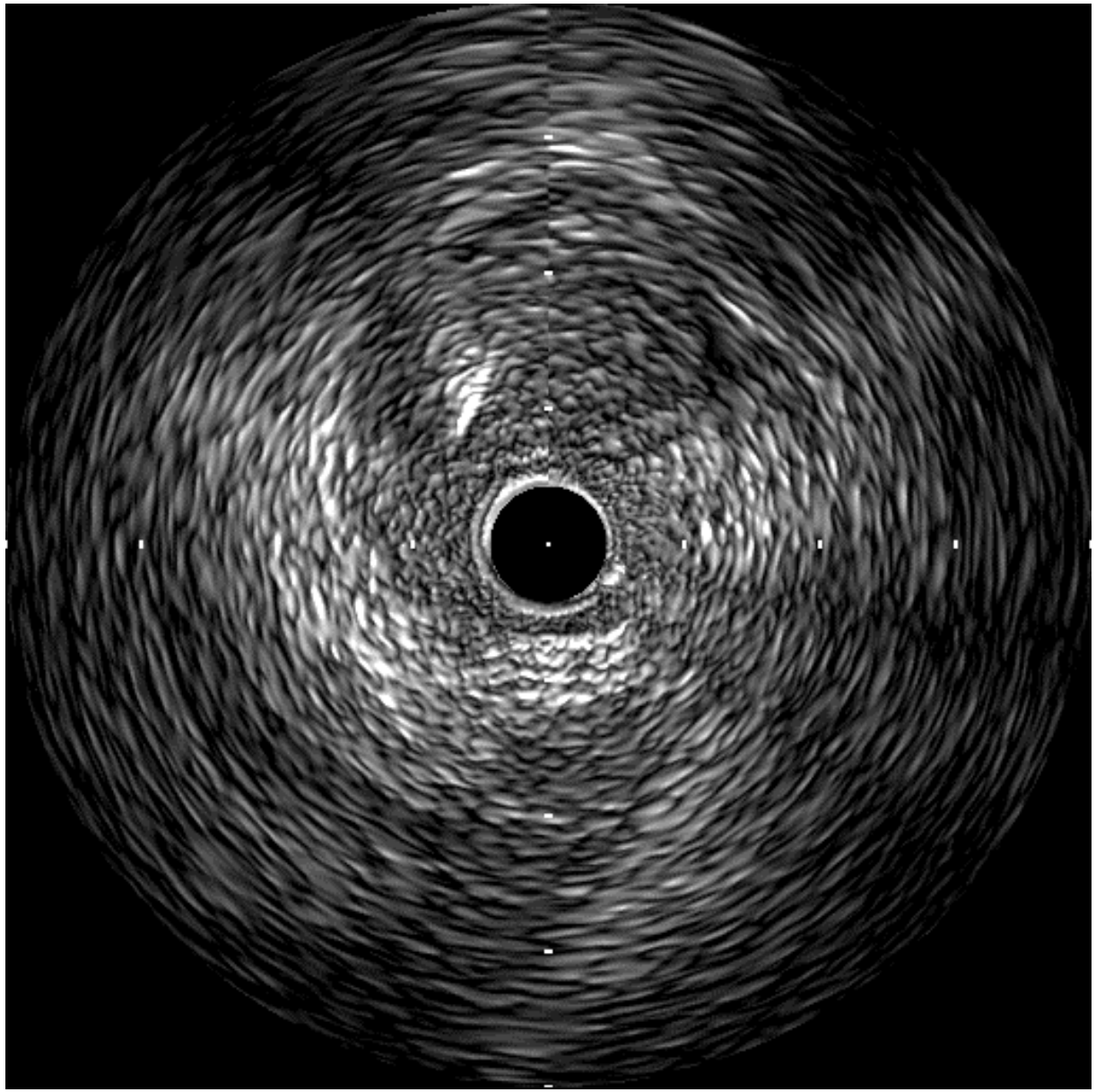


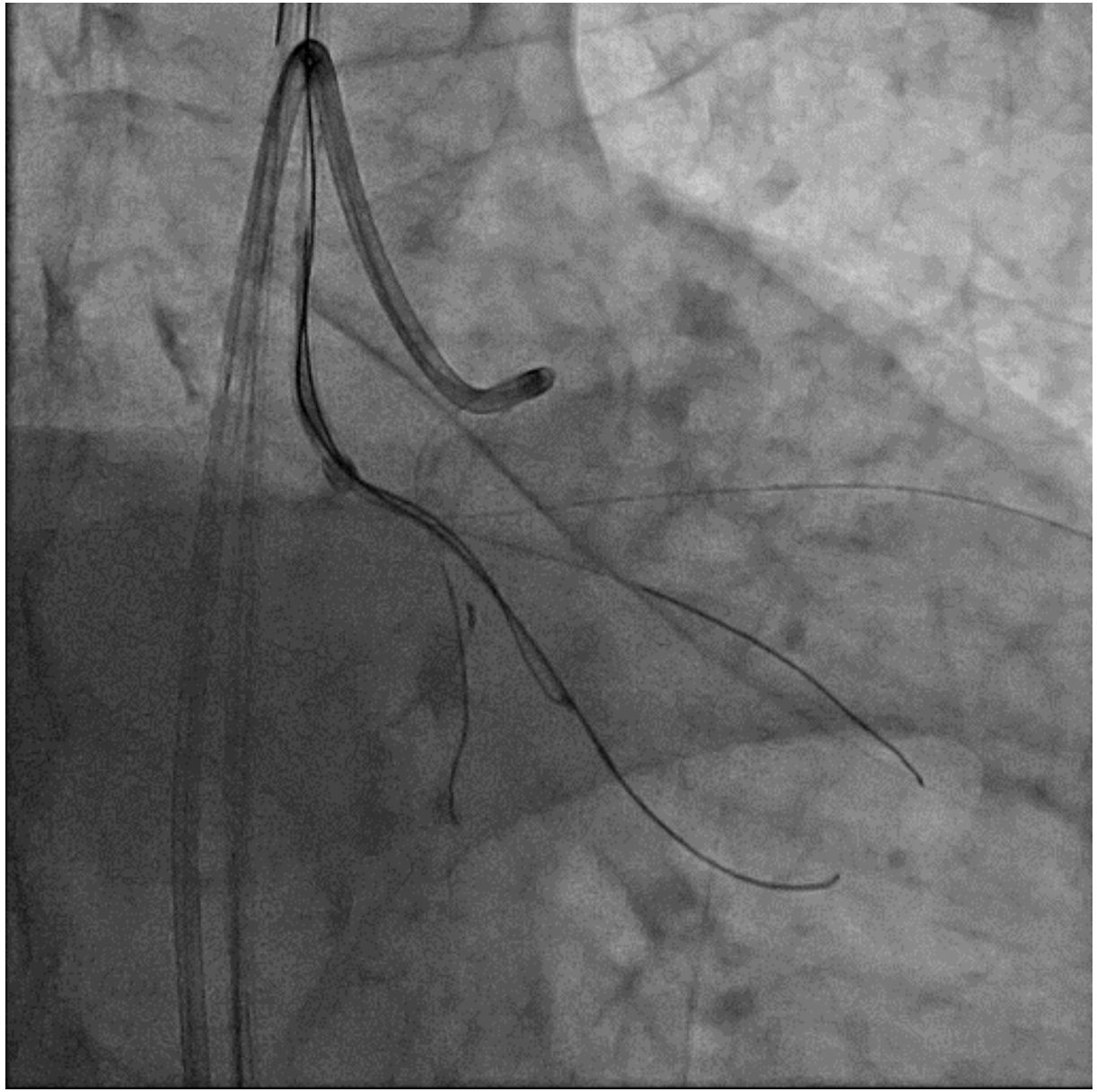


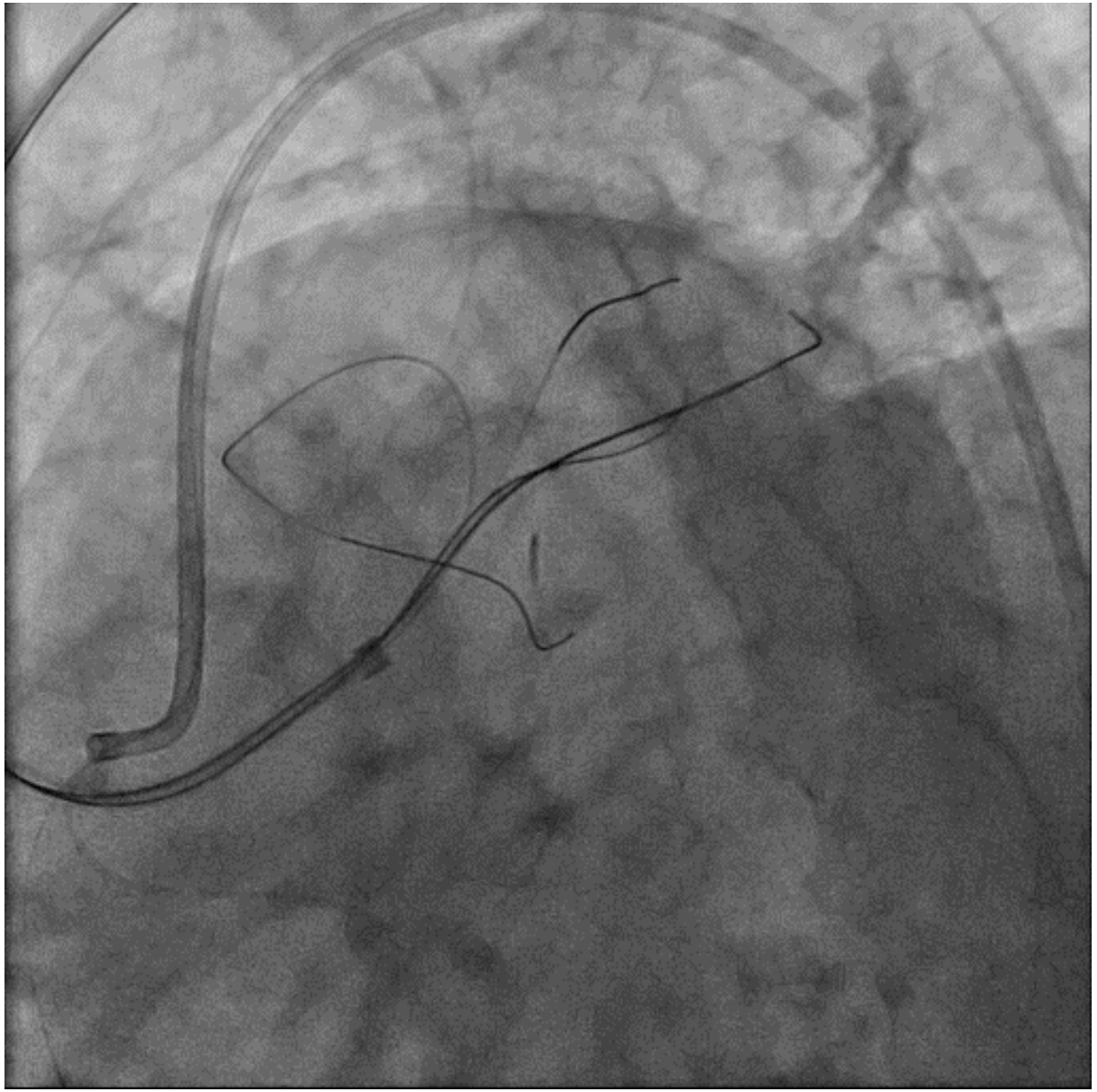
IVUS

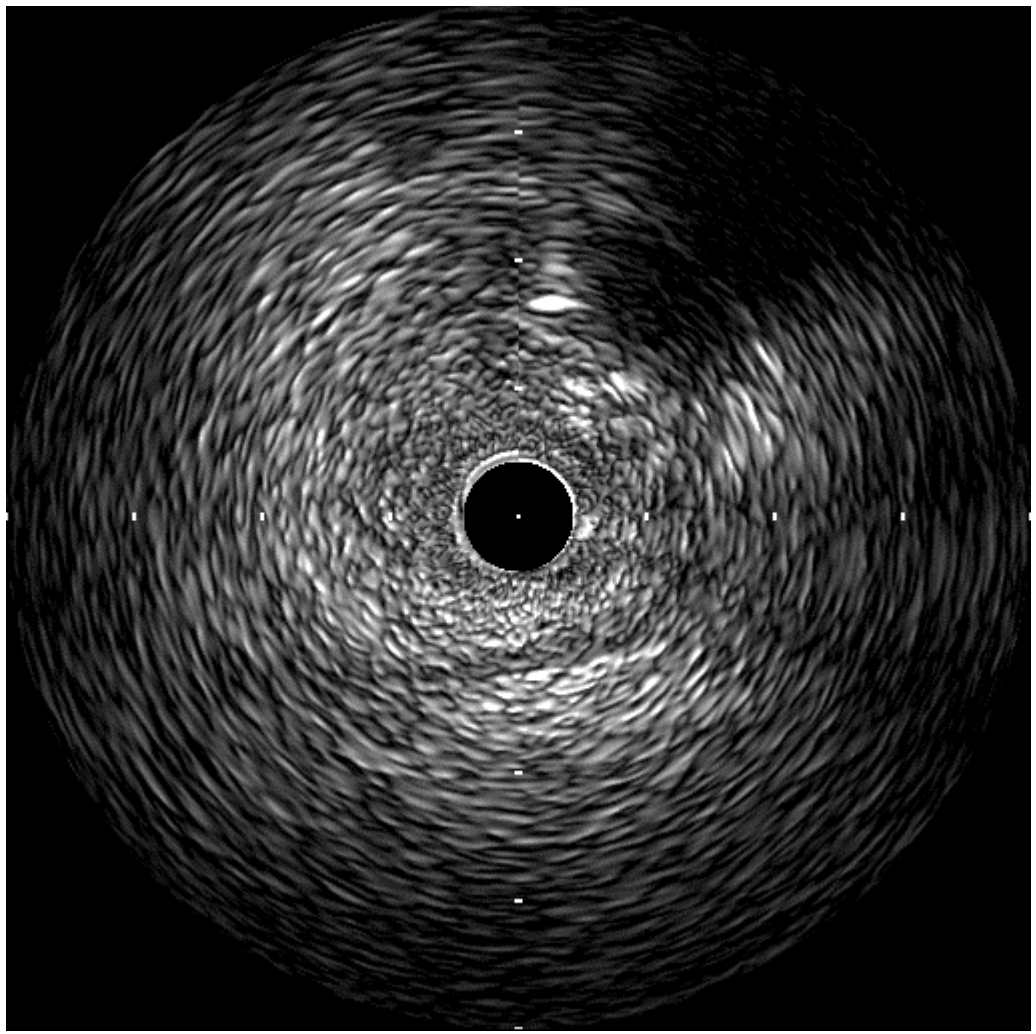


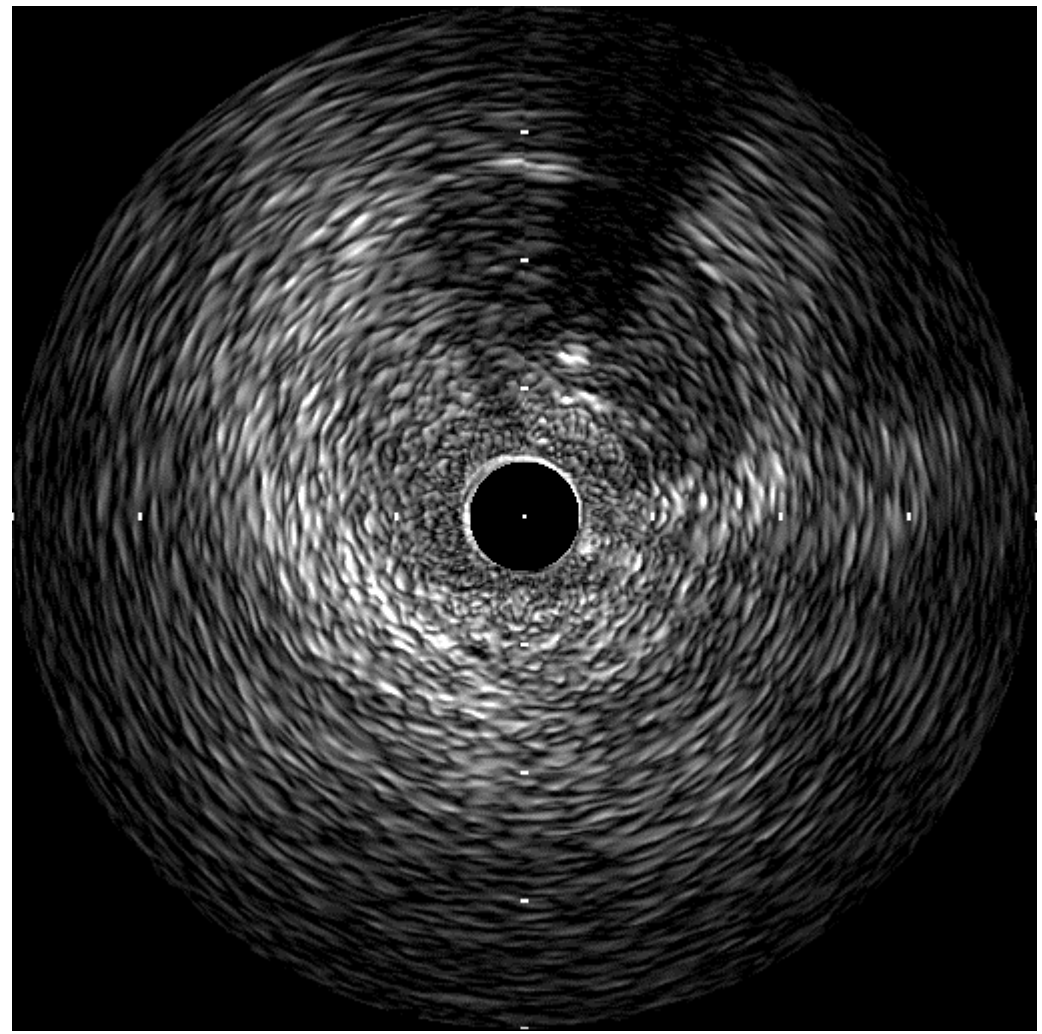


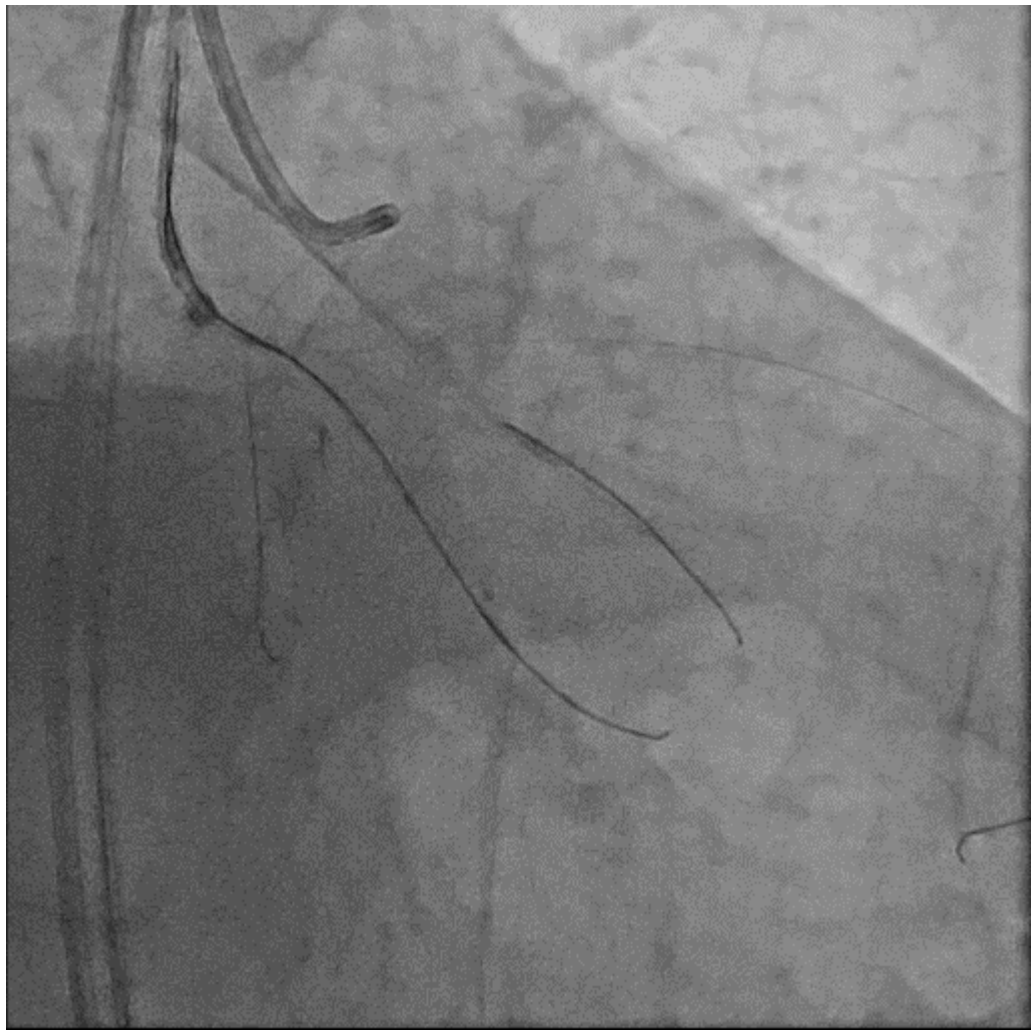


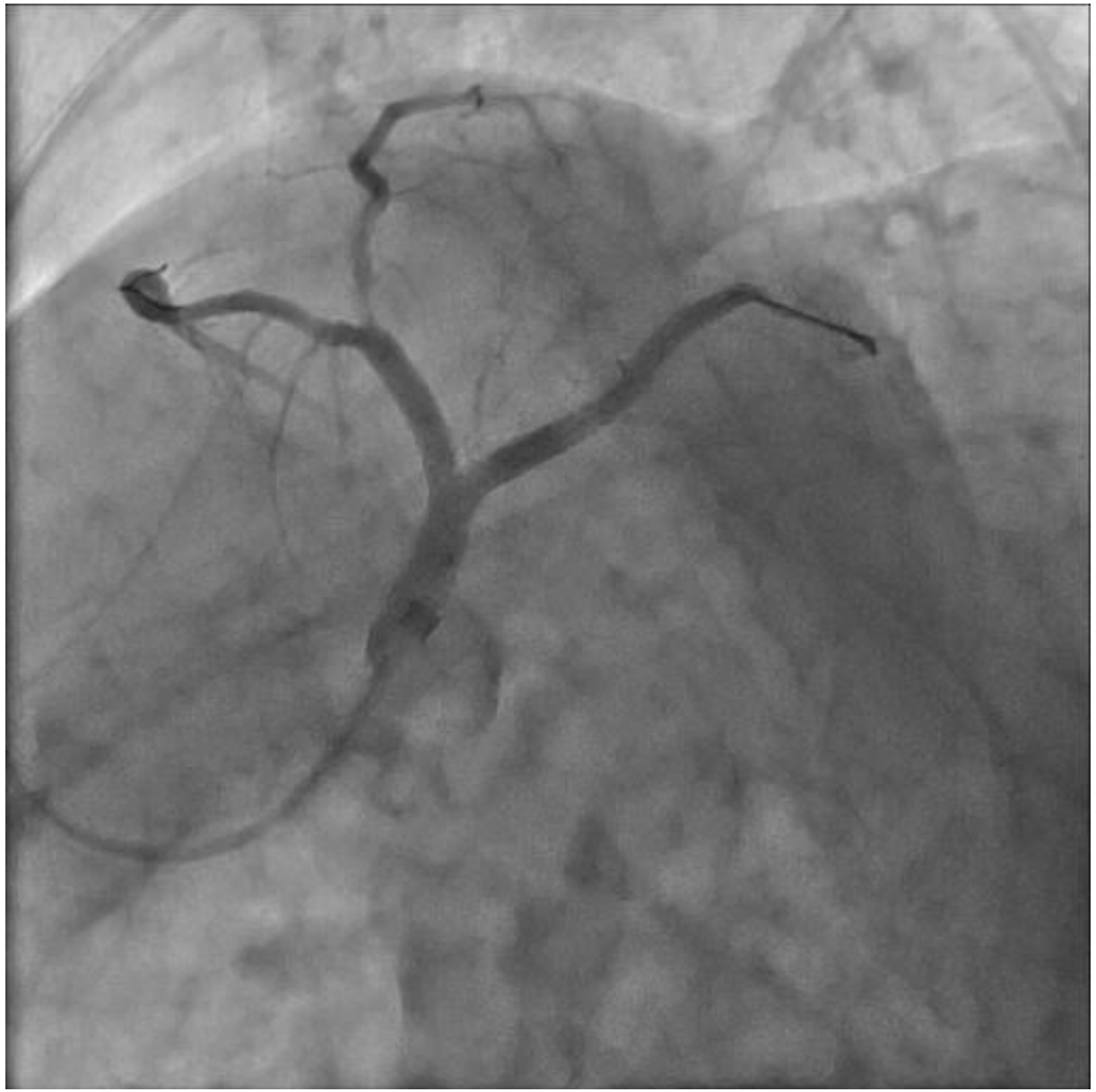




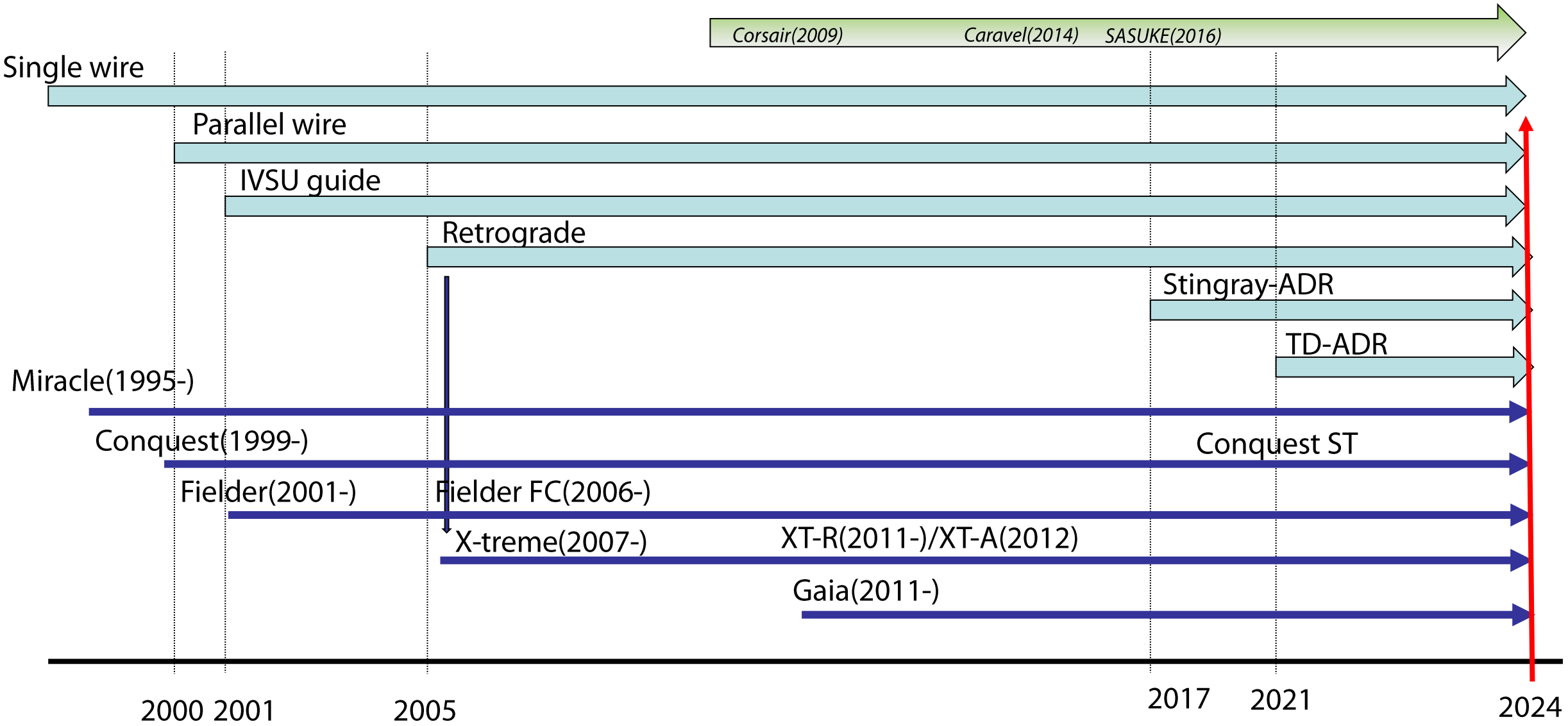








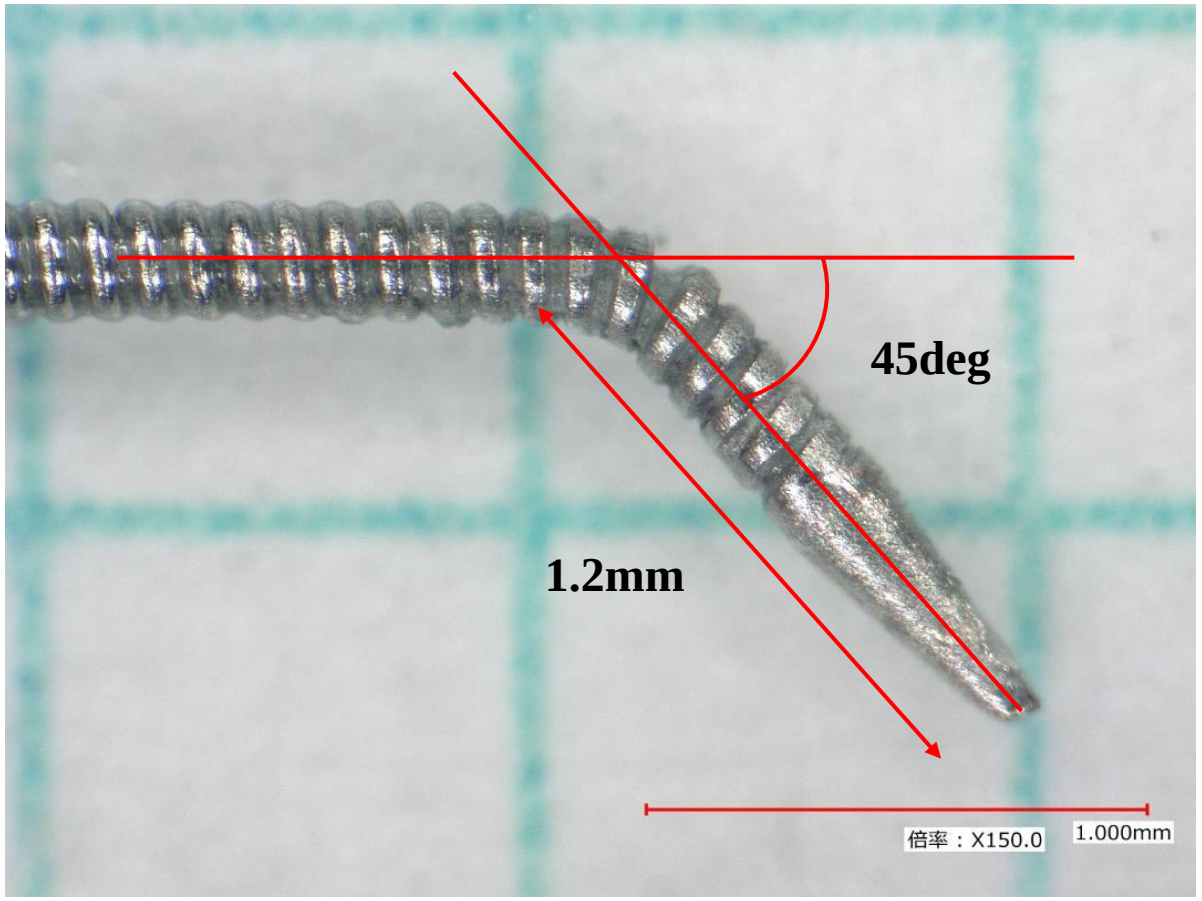
History of CTO technique in Japan



What`s NEXT for ADR

Mechanical wire development

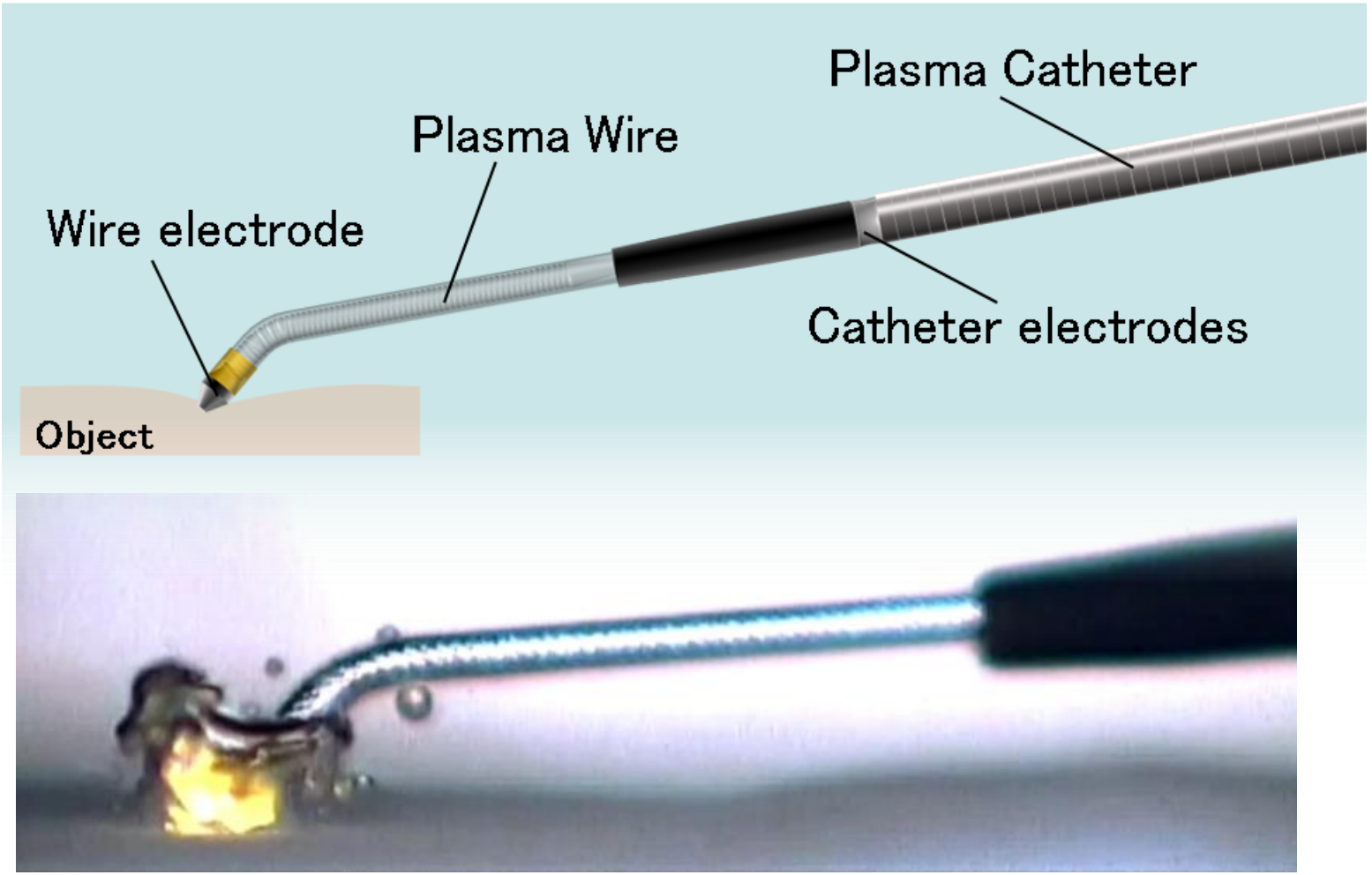
Conquest ST



Version up

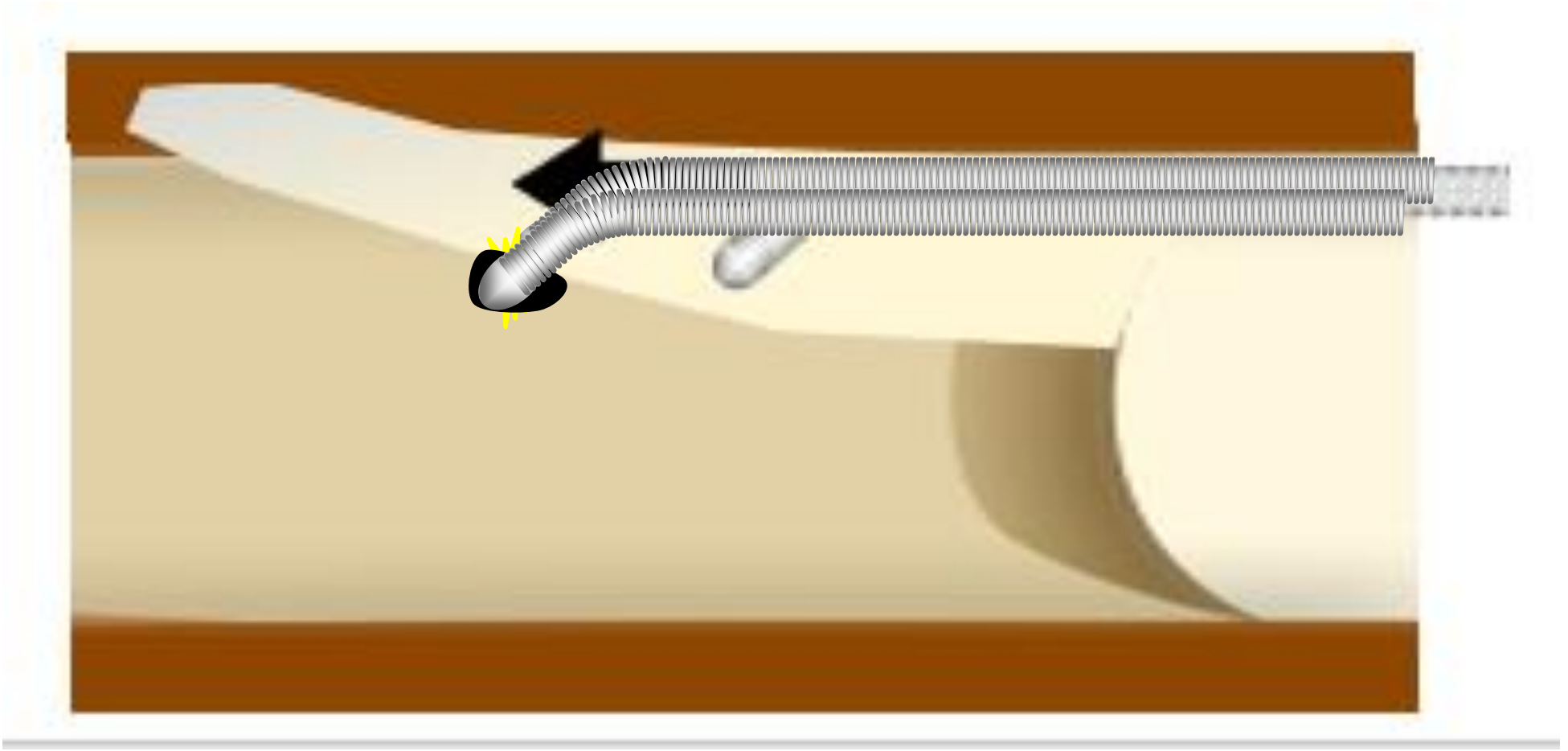
What`s NEXT for ADR

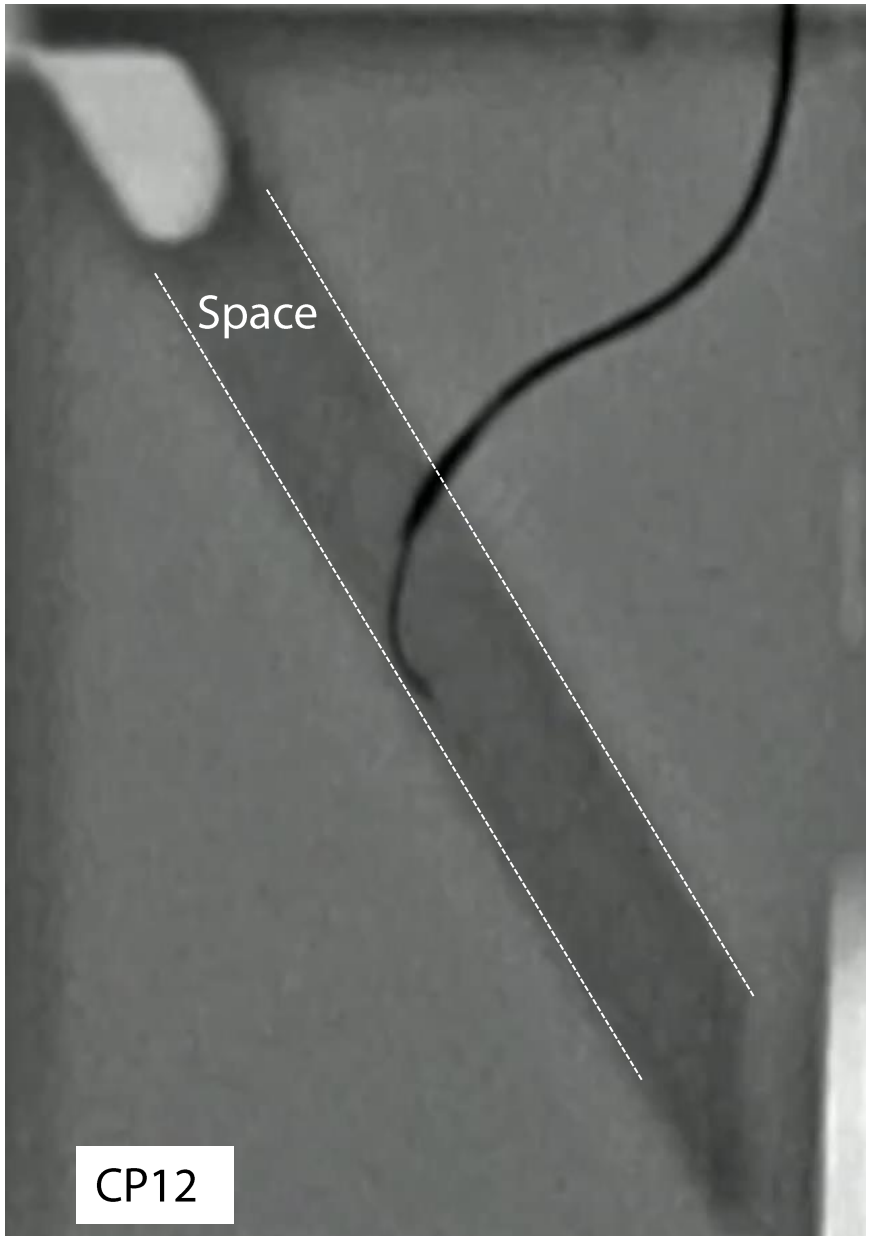
Developed from Mechanical wire to Plasma mediated system

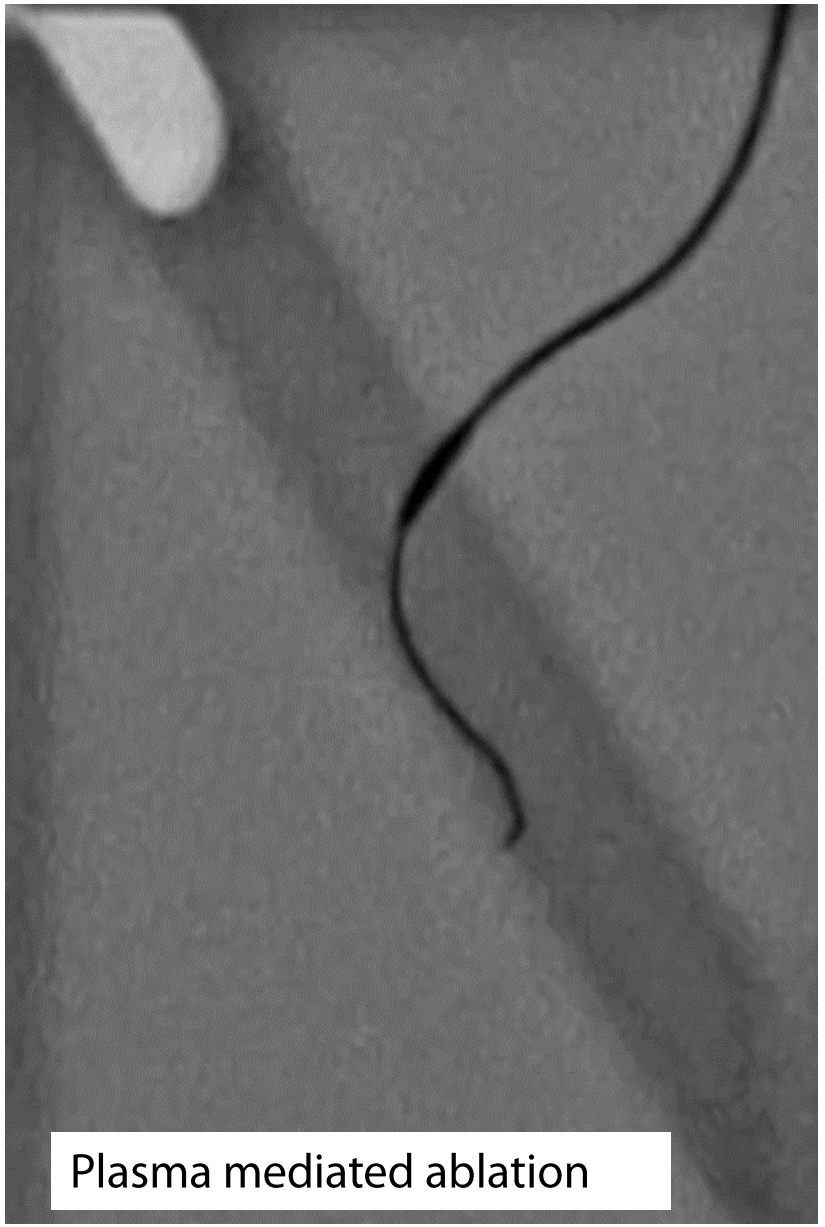


Plasmawire can be penetrated with the tip of the Plasmawire in contact with the target.

Plasma-Mediated Ablation System




Space
CP12


Plasma mediated ablation

Summary

- AFR is not common in Japan now, because it is not a reproducible technique.
- Although ADR in Japan has started in 2017 with stingray system, it was not widely spread.
- In 2021, a New wire (Conquest ST) which was designed for stingray system contribute to Tip detection IVUS guided ADR technique.
- Now, that technique become widely used in Japan.
- In Next stage, a new mechanical wire and plasma mediated ablation system will contribute to ADR procedure.