

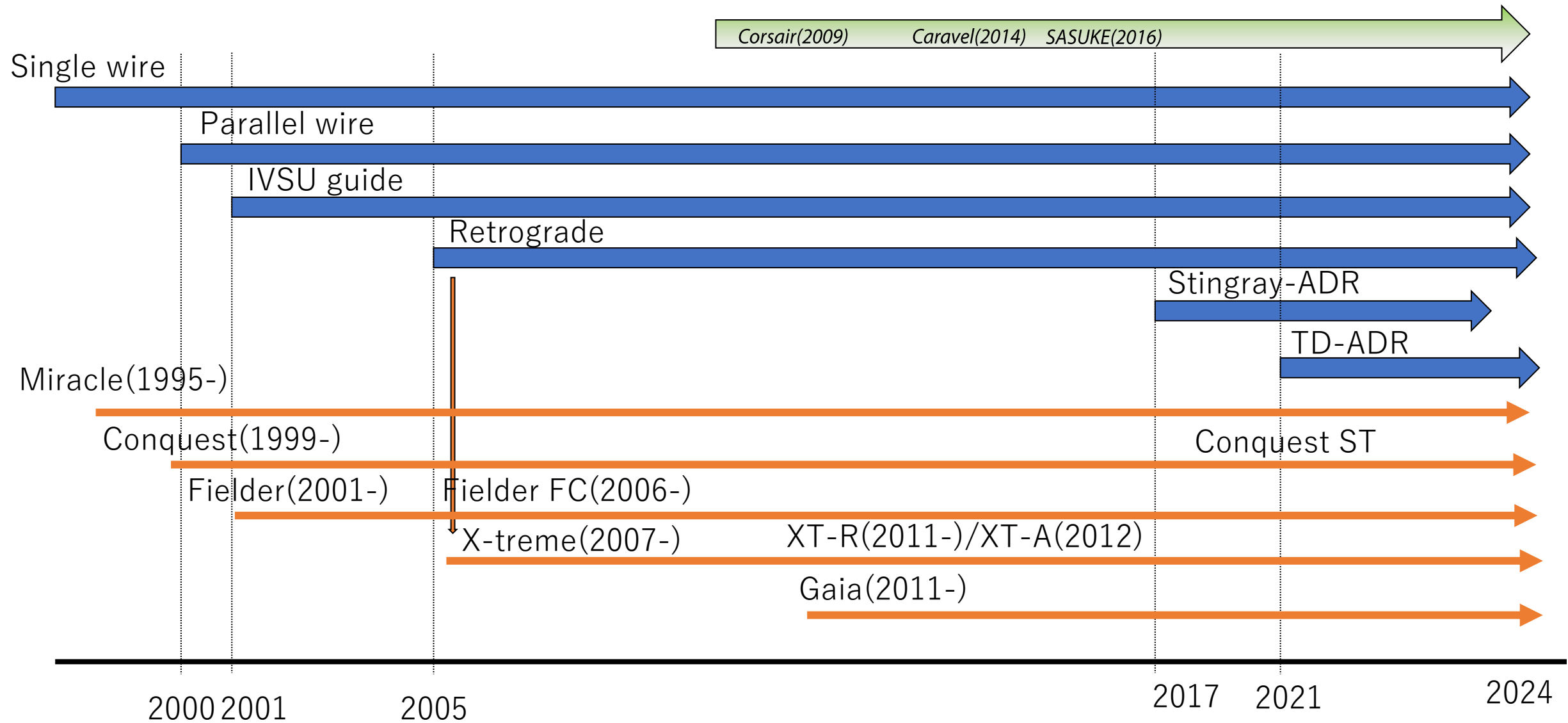
What is the Next Weapon for CTO-PCI

Toyohashi Heart Center

Maoto Habara, MD



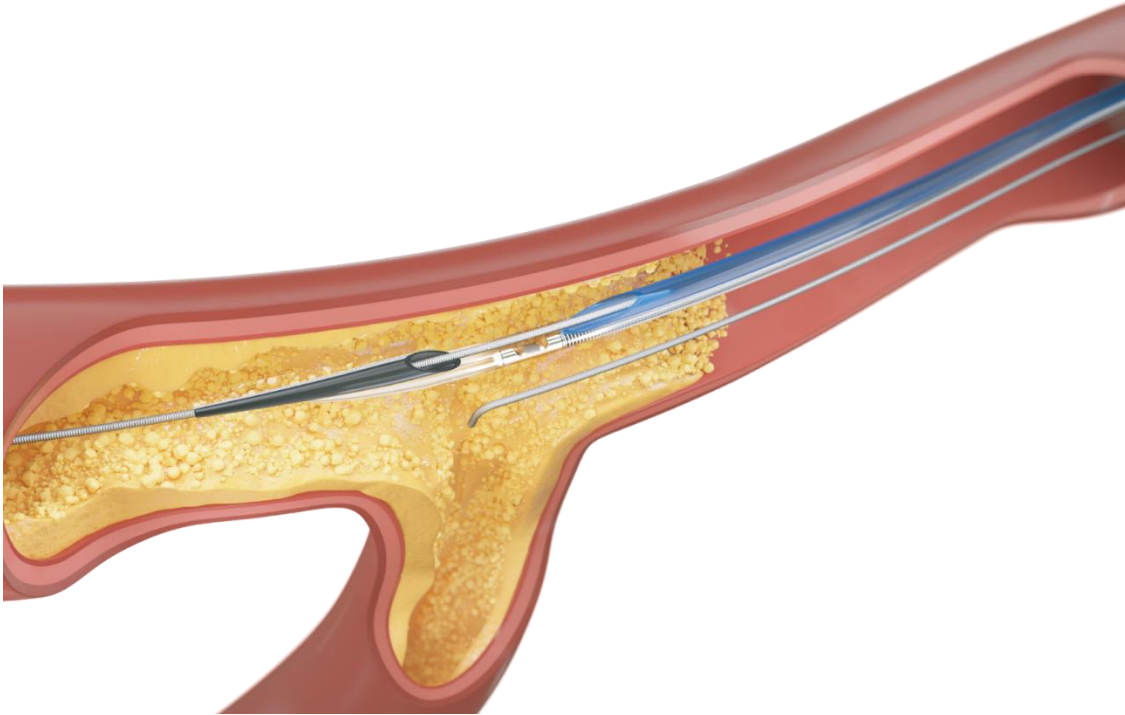
History of CTO technique in Japan



New devices in Japan



AnteOwl WR™



Conquest pro 12 ST





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

Advanced sensor position (**9→8mm**)

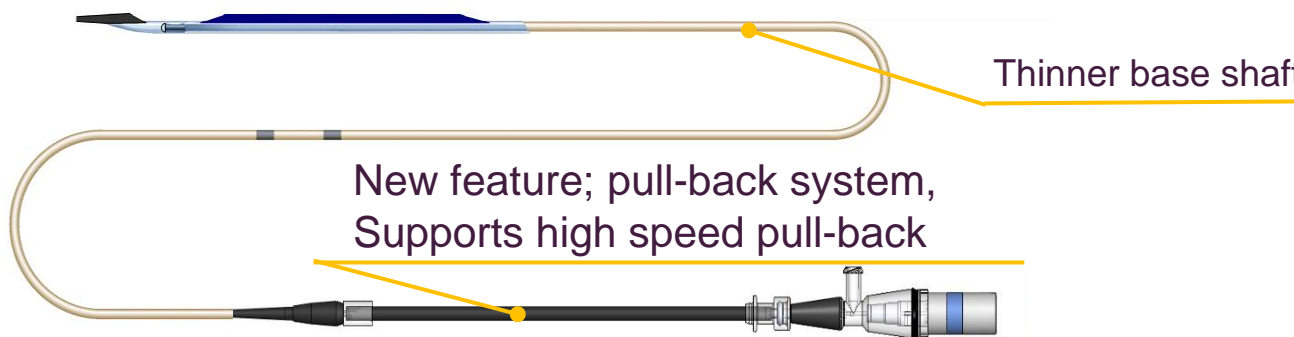
High durability coating



Overall
view

Thinner base shaft

New feature; pull-back system,
Supports high speed pull-back



2.5mL Angio syringe



Guide Wire
Insertion jig





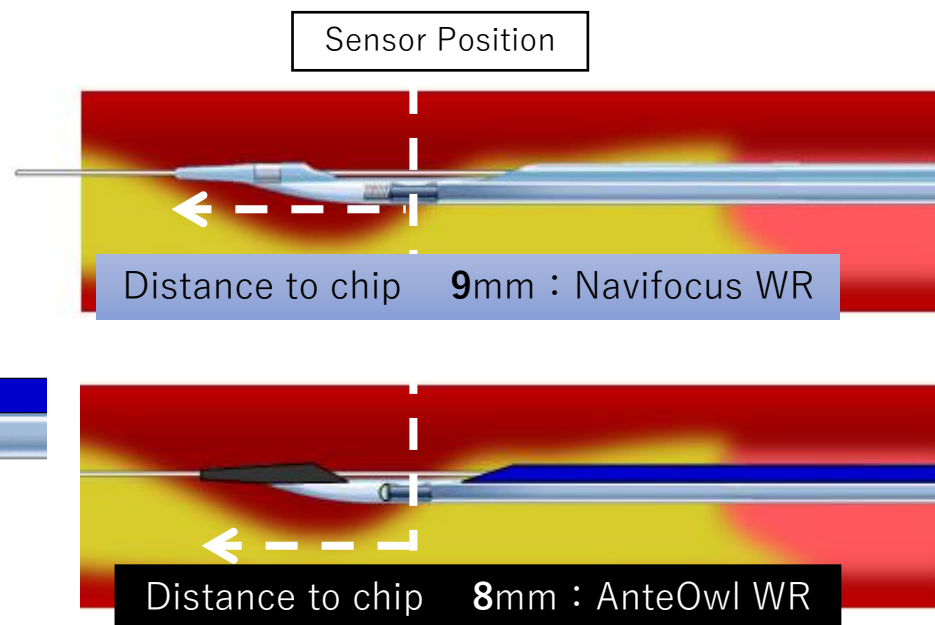
Sensor position from tip forward

AnteOwl WR™

Enables observation with less stress on vessels than before

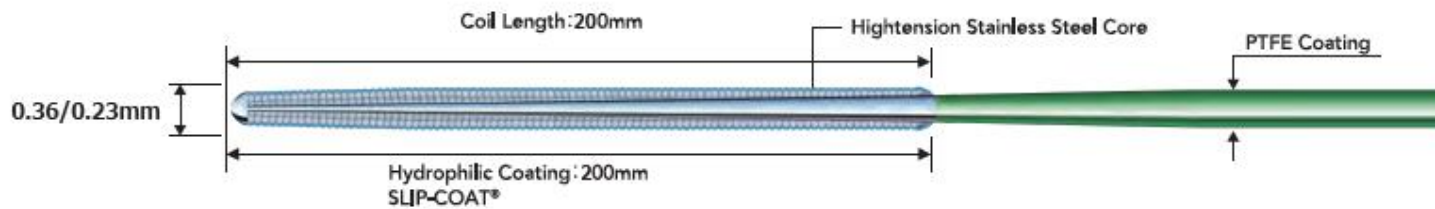
- Reduces false lumen dilation and true lumen compression
- Reduced risk of dissection

Sensor position; From the tip 9mm → 8mm



Conquest Pro12 ST (Sharpened-Tip)

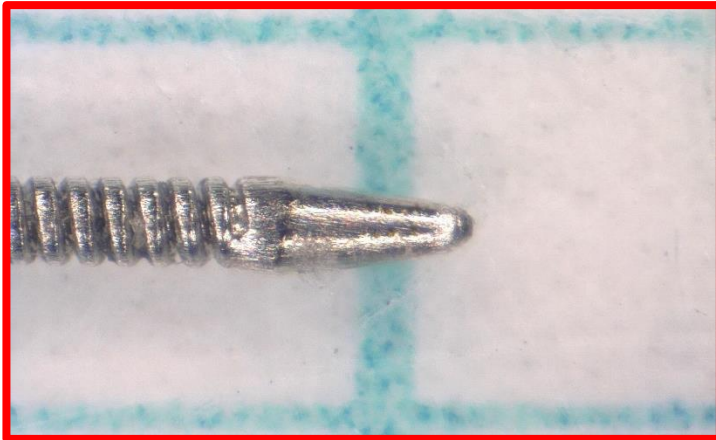
Structure and Ordering Information



For more penetration force and efficacy

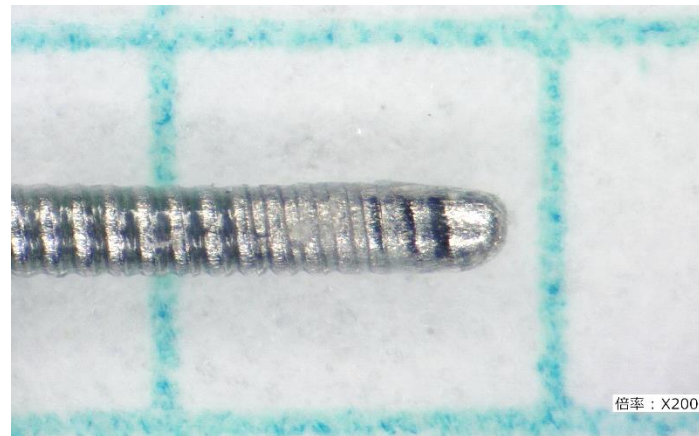
- ✓ **Micro cone** tip design
- ✓ Pre-shaped **1.2mm angle tip**
- ✓ **Non coating** on the ball tip

Conquest Pro12ST



Micro cone tip

Conquest Pro12

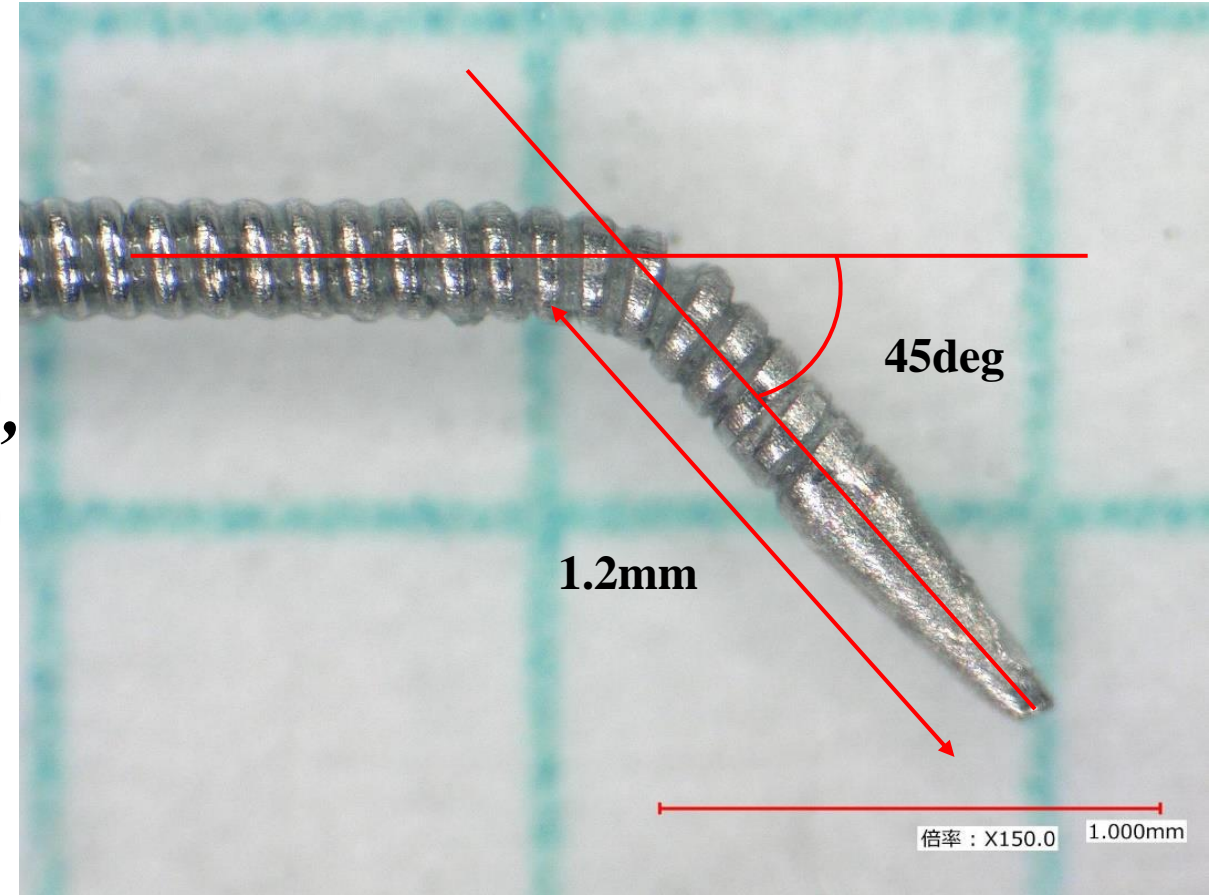
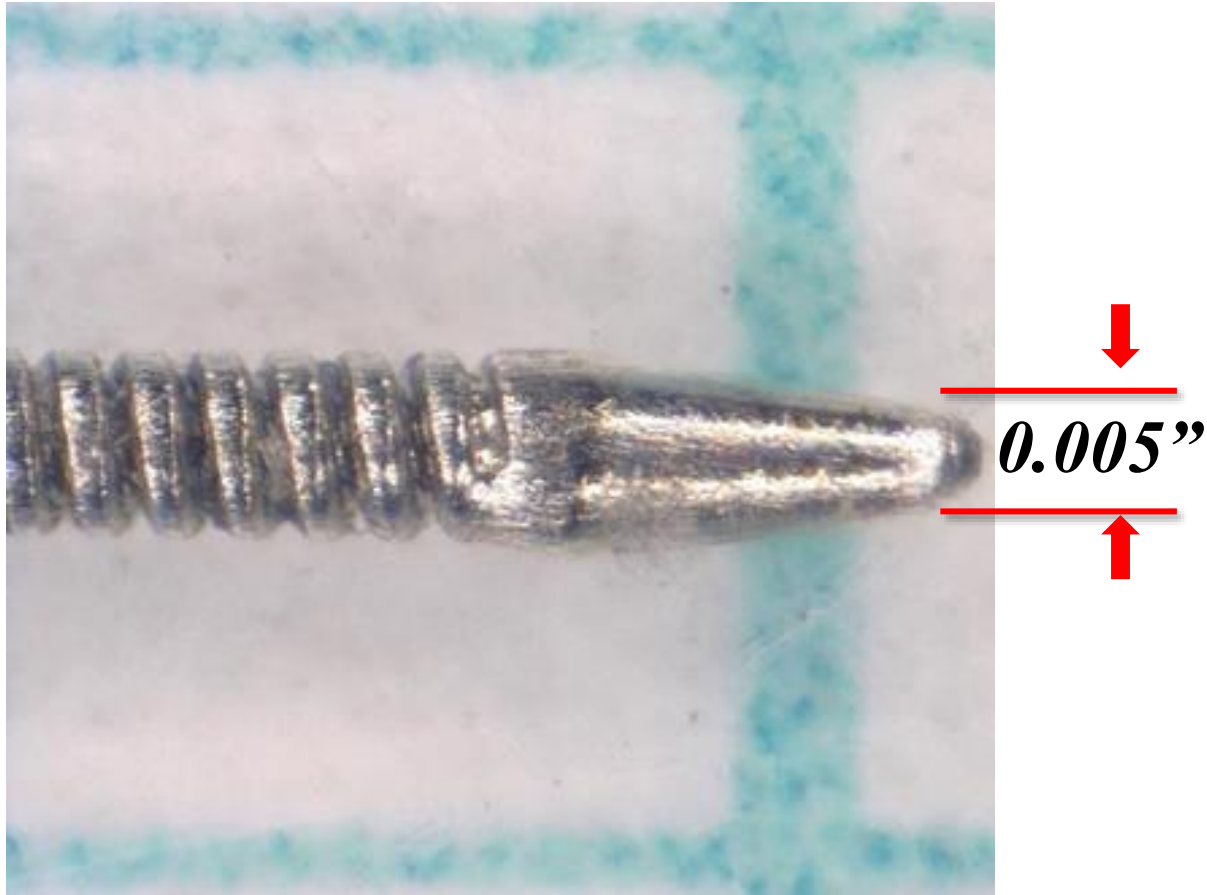


Round tip

ADR wire



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

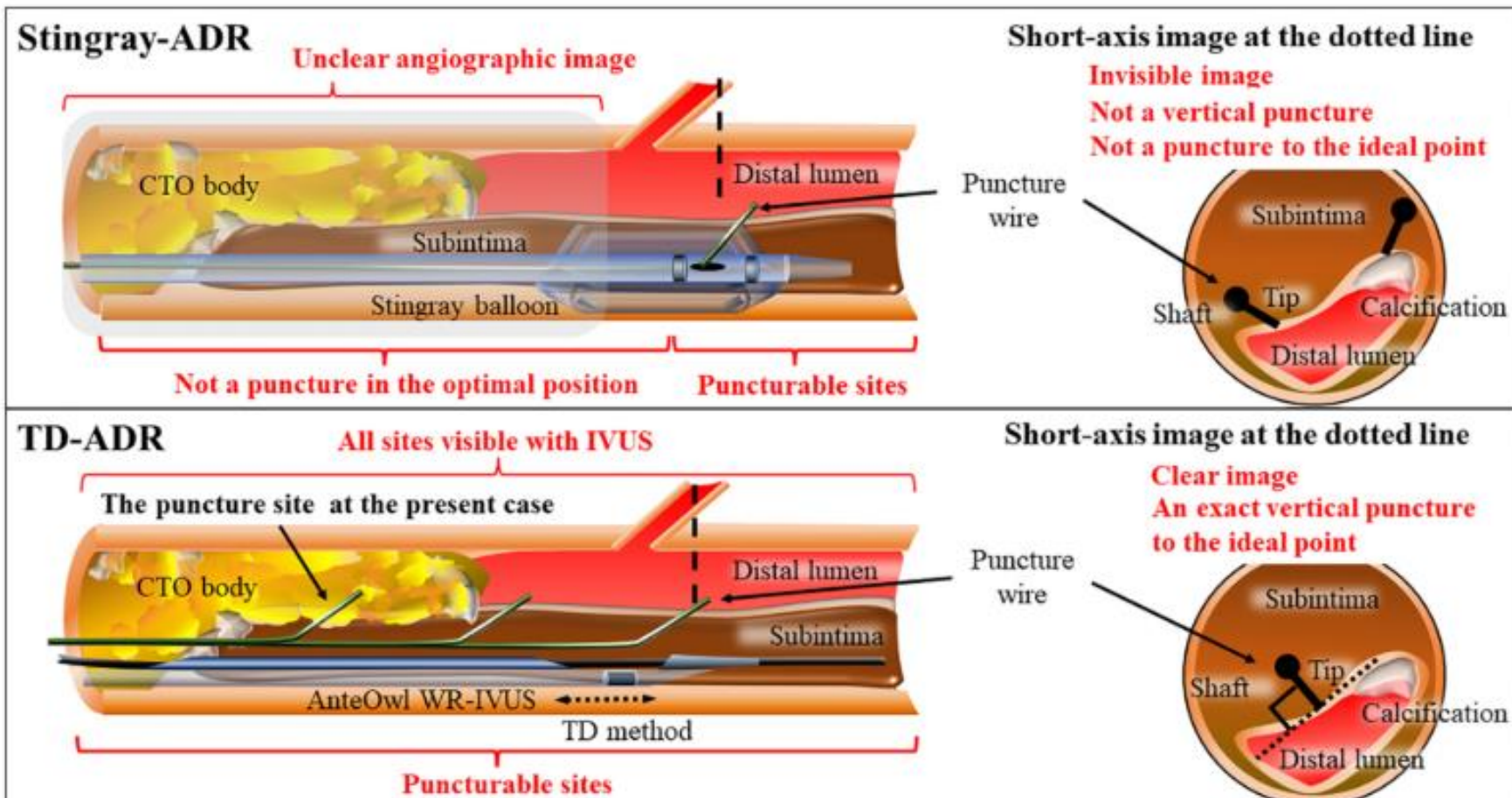


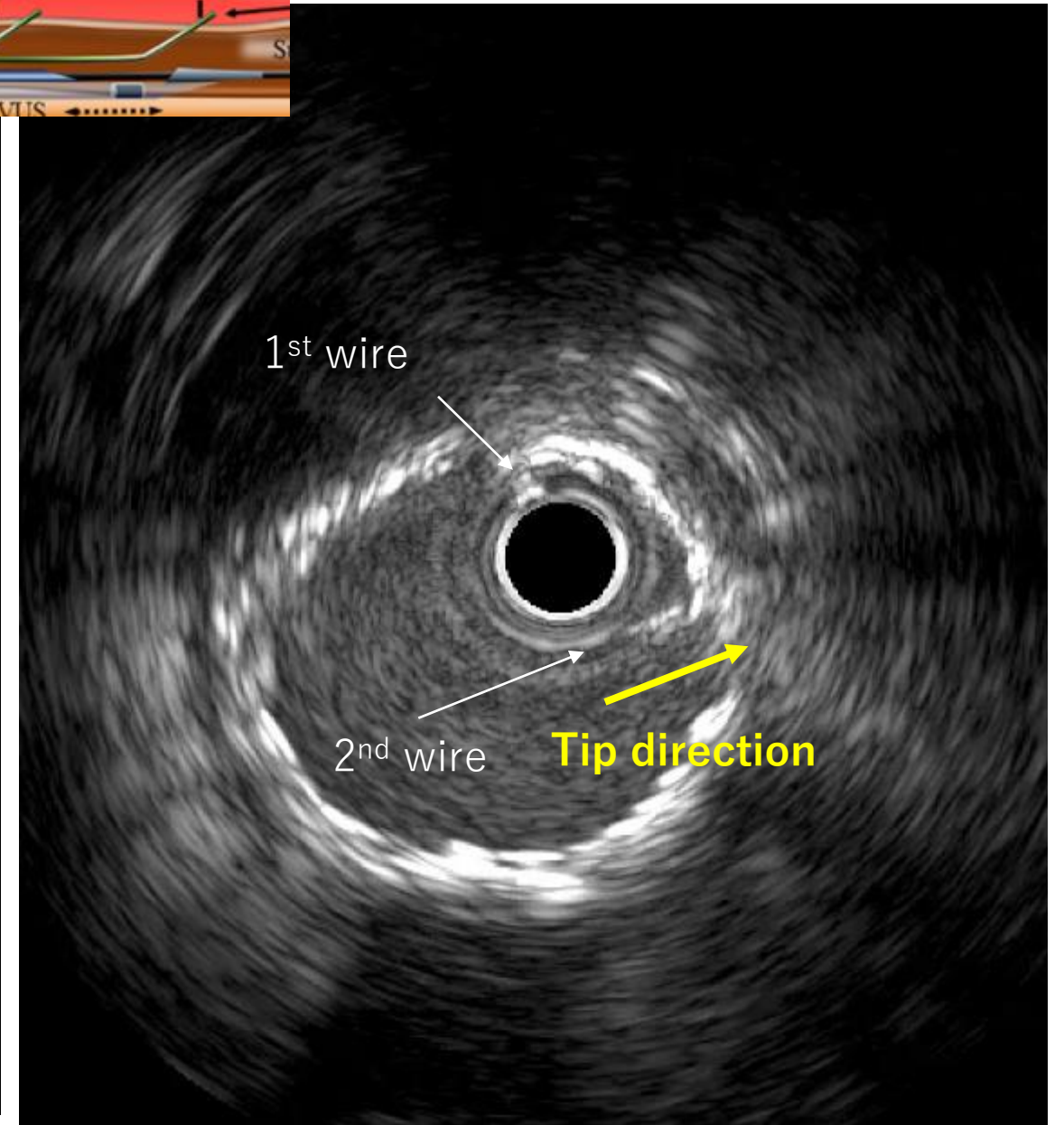
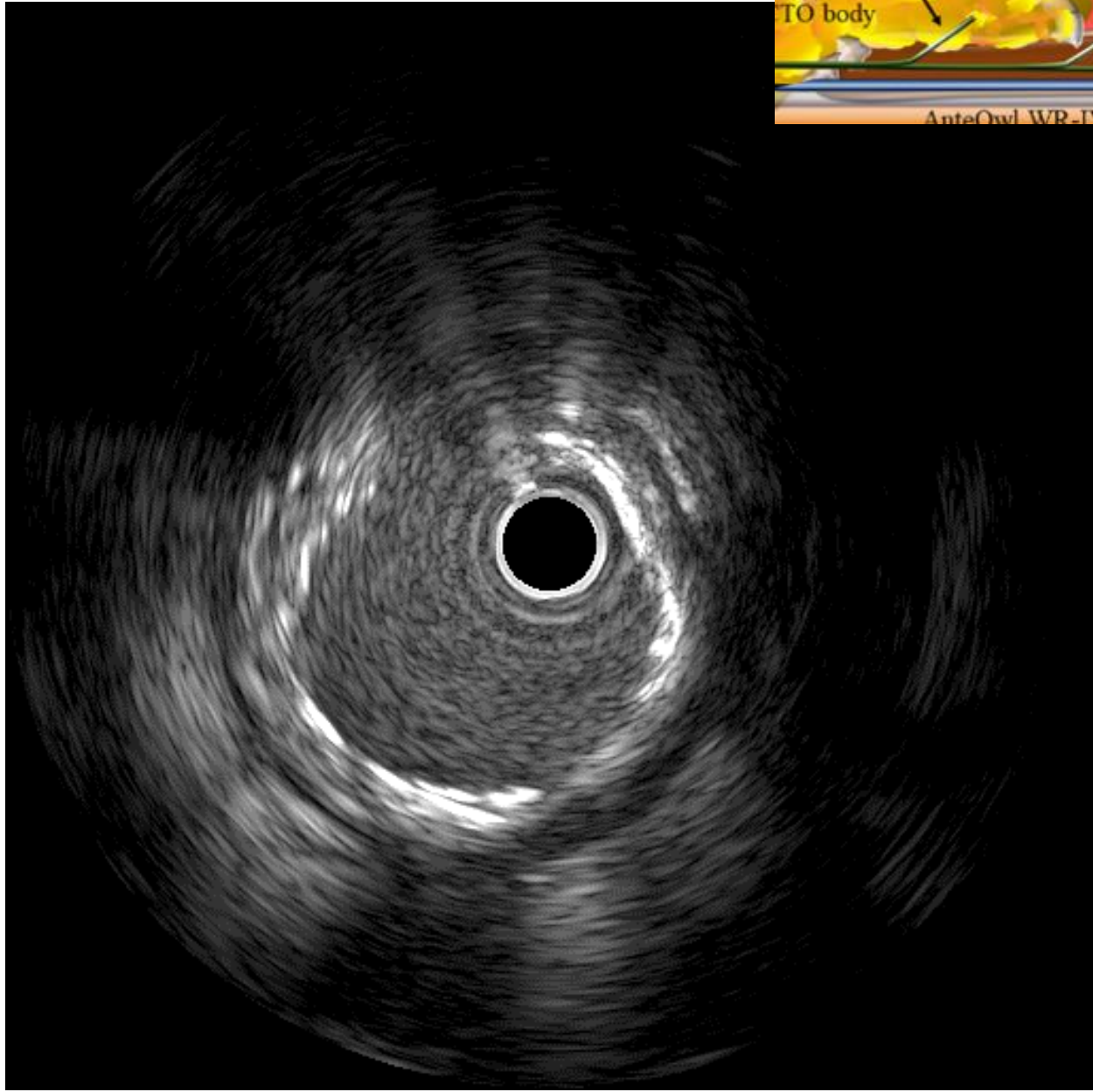
New Antegrade Dissection Re-Entry Technique With Tip Detection Method and New Puncture Wire in CTO-PCI

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

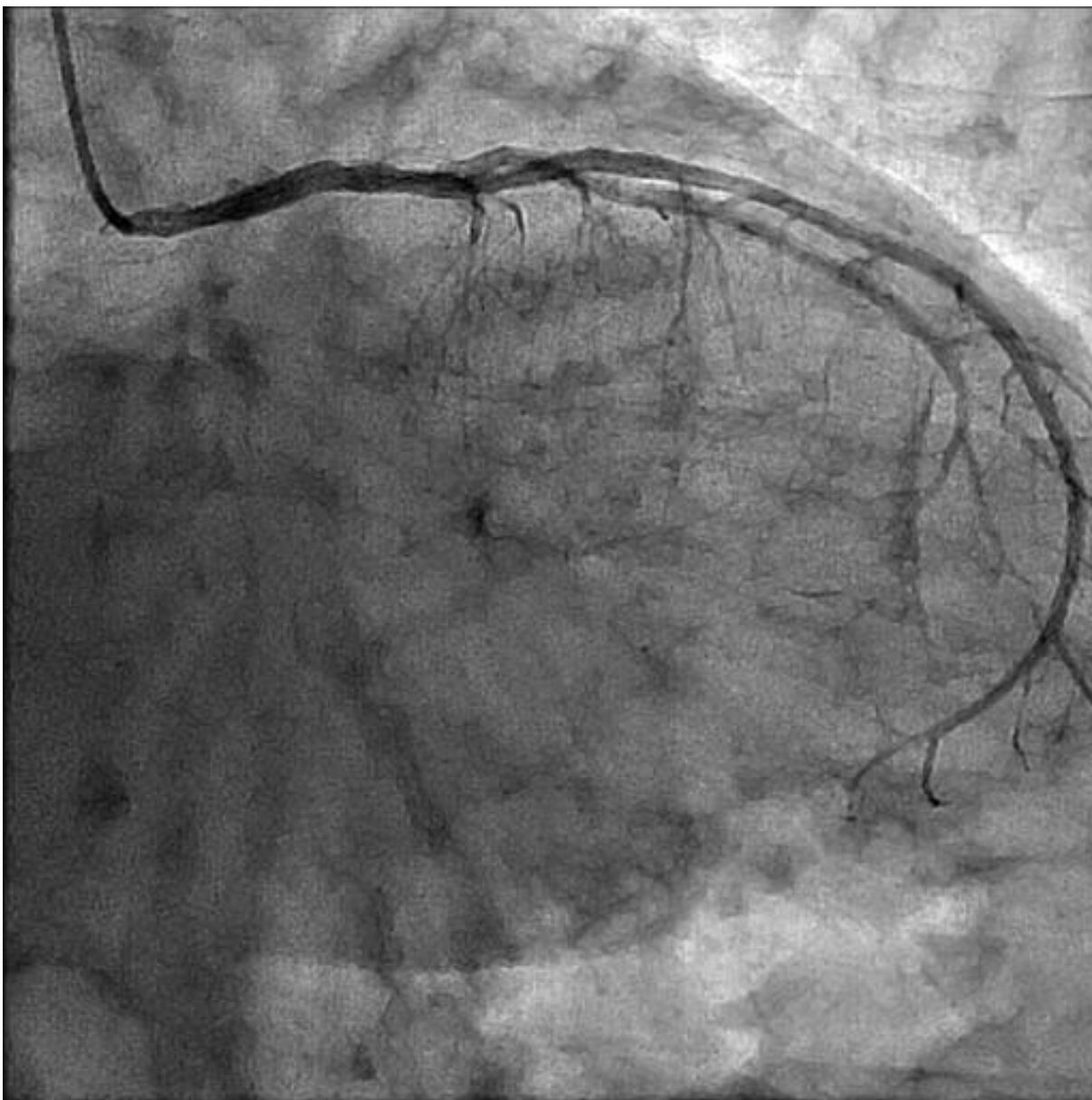
Kota Tanaka, MD,^a Atsunori Okamura, MD, PhD,^a Etsuo Tsuchikane, MD, PhD,^b Hiroaki Matsuda, MD,^c

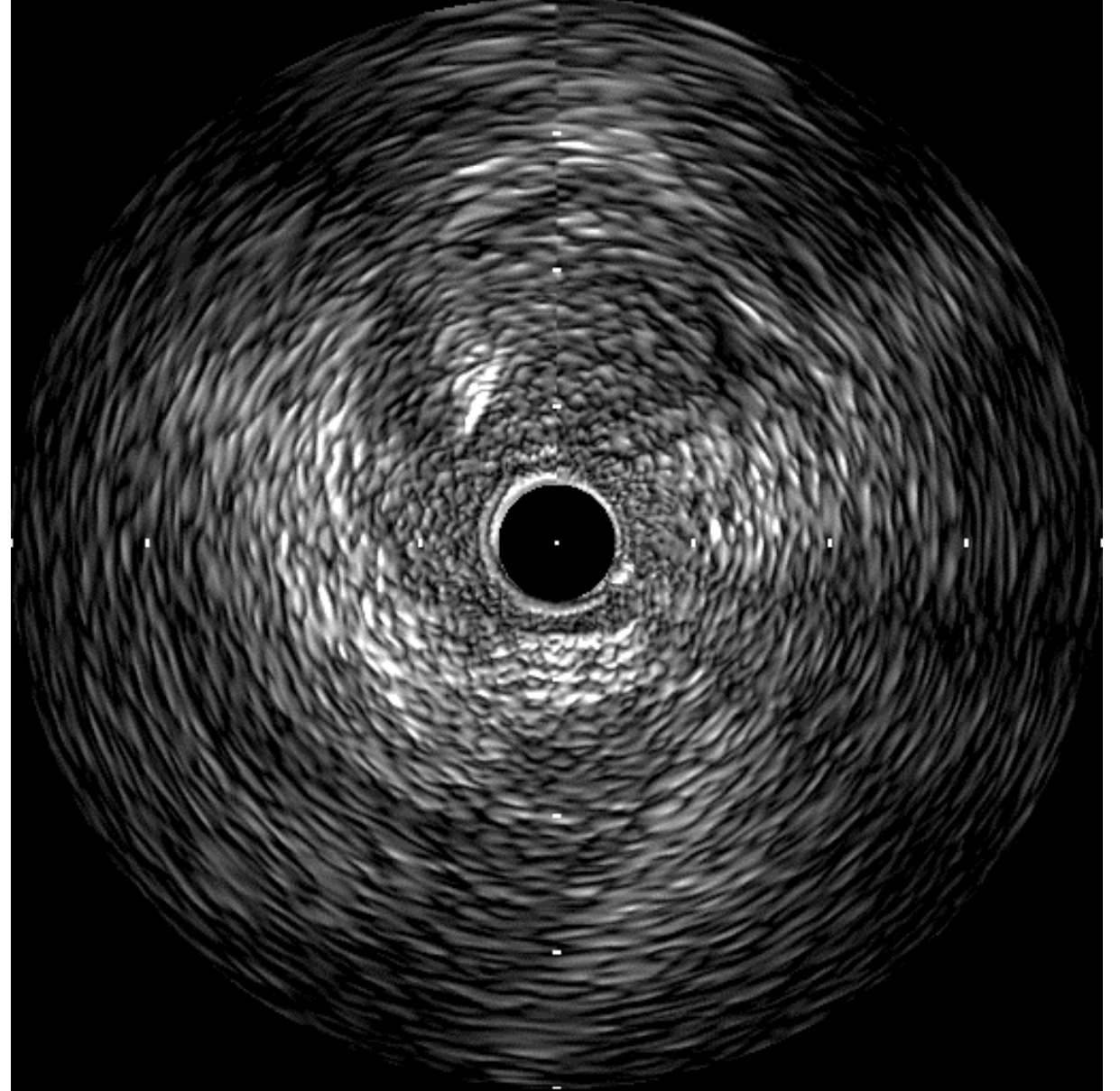
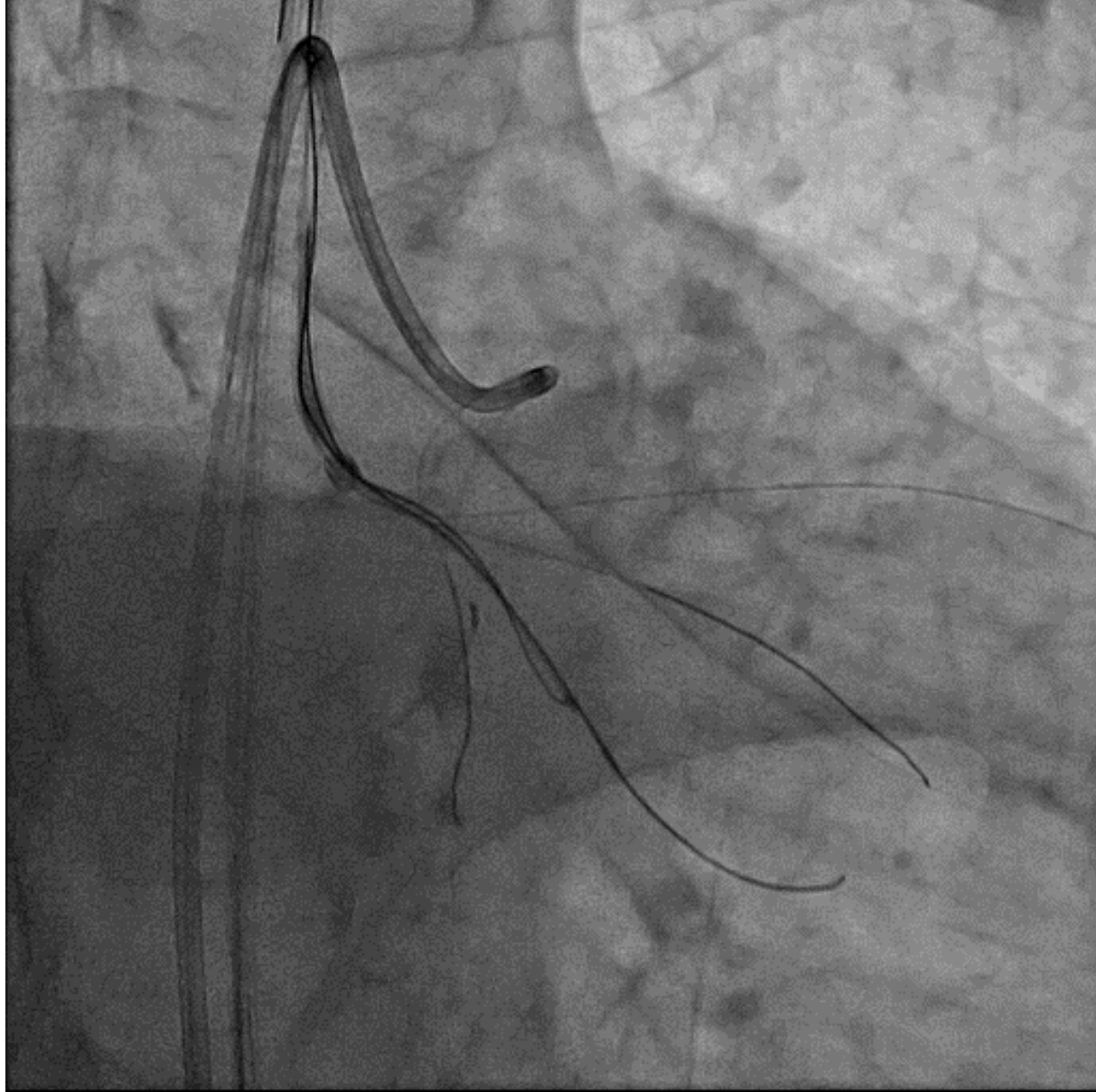
FIGURE 1 Illustrations of the Difference Between Stingray ADR and TD ADR

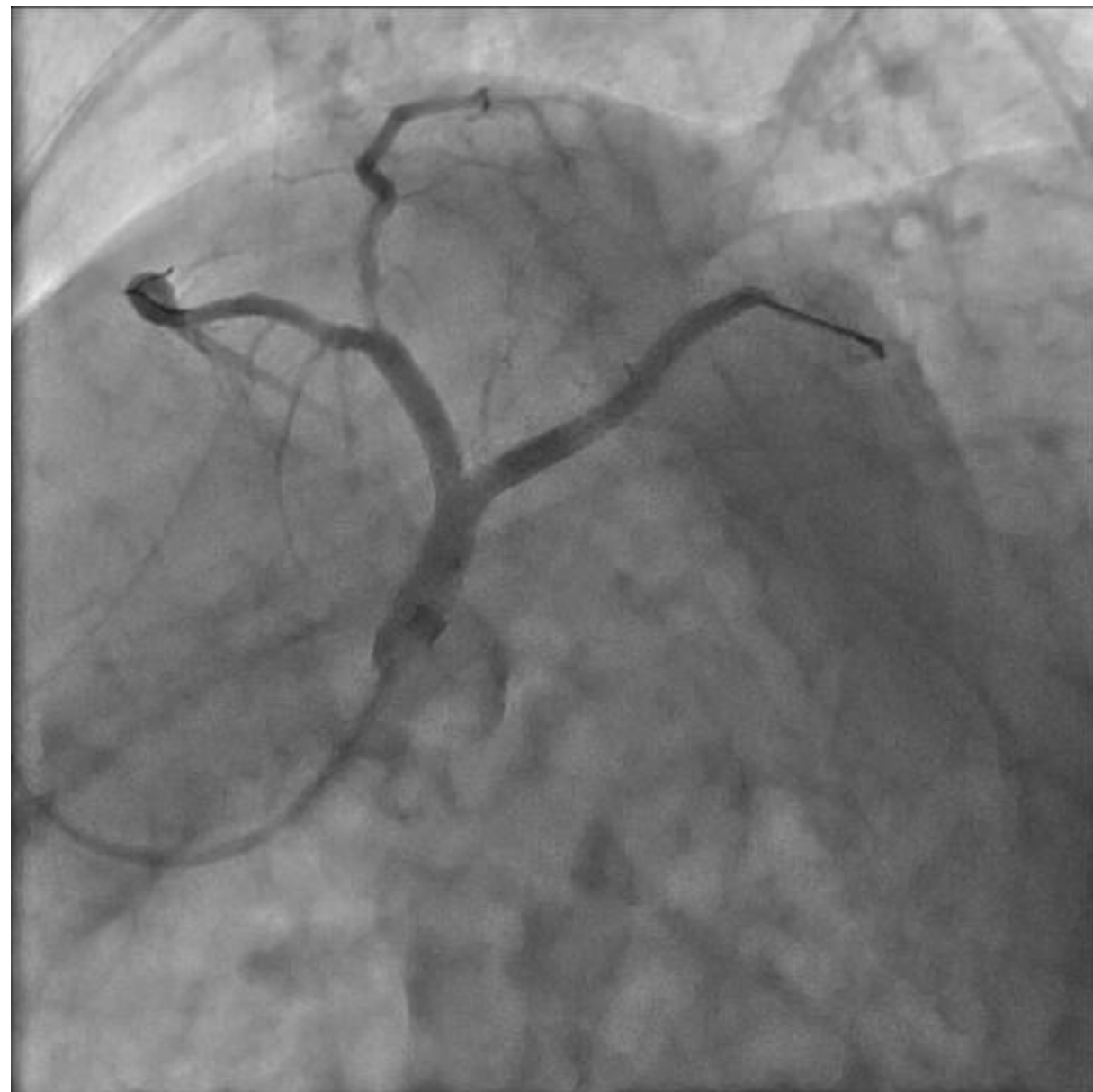




Case: LCX CTO



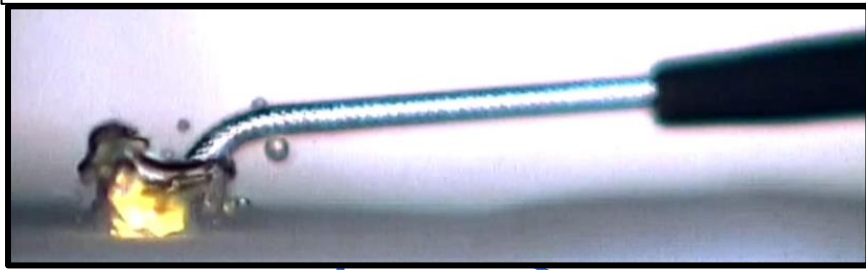




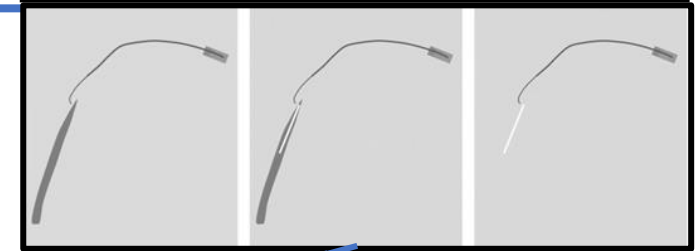
What's the Next ?

These will appear in the CTO PCI area in the near future

Plasma-mediated ablation (PMA) system

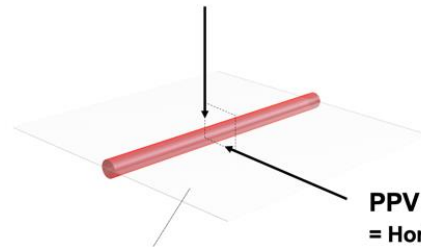


Distal true lumen mapping



Penetration Plane method

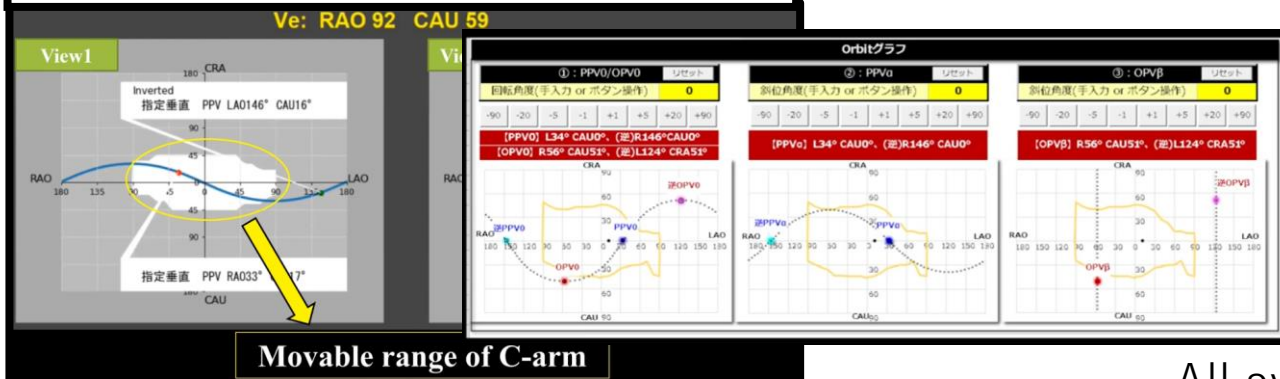
OPV (objective perpendicular view)
= Vertical view of the PP



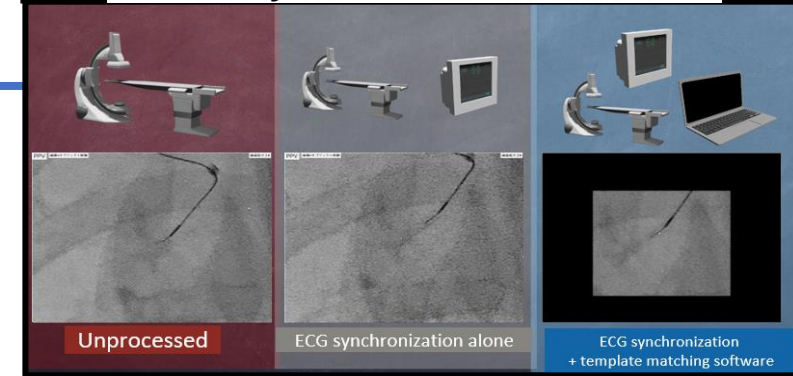
PPV (penetration plane view)
= Horizontal view of the PP

Penetration plane (PP)

Axis-vector analysis software

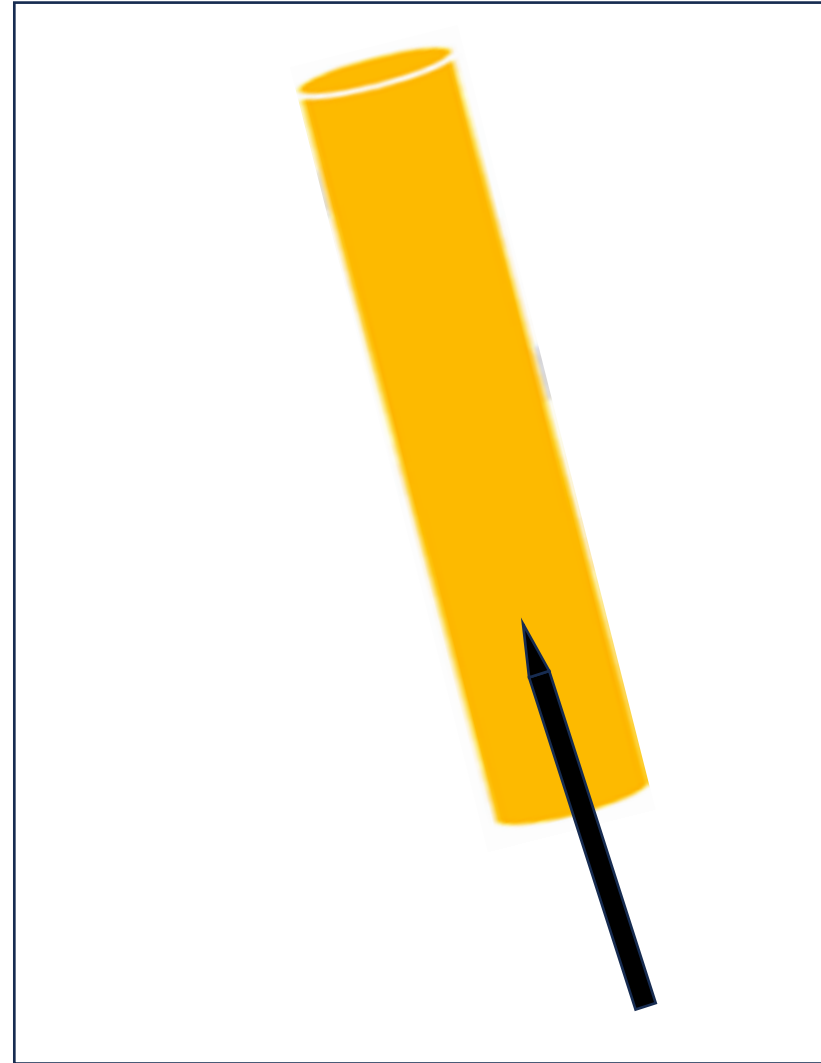


ECG-synchronized fluoroscopy

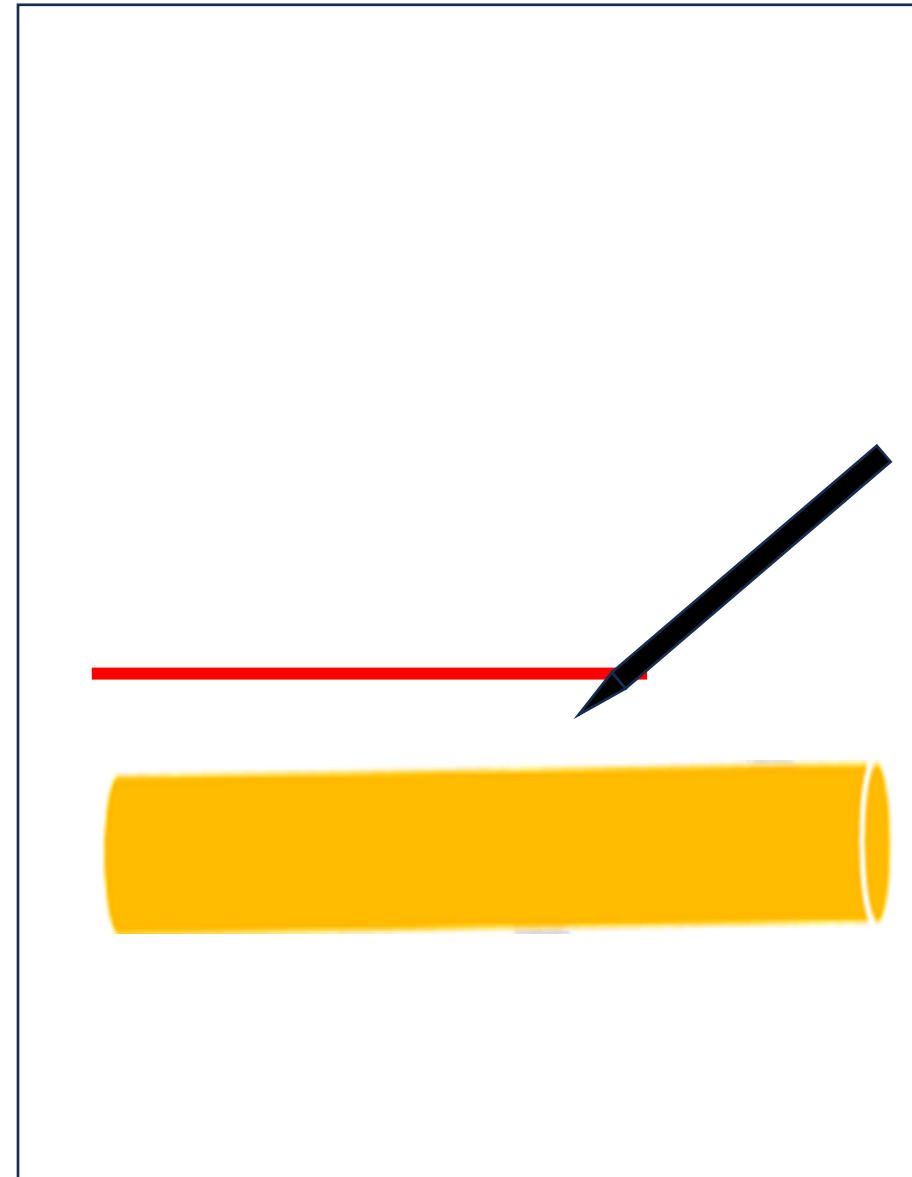
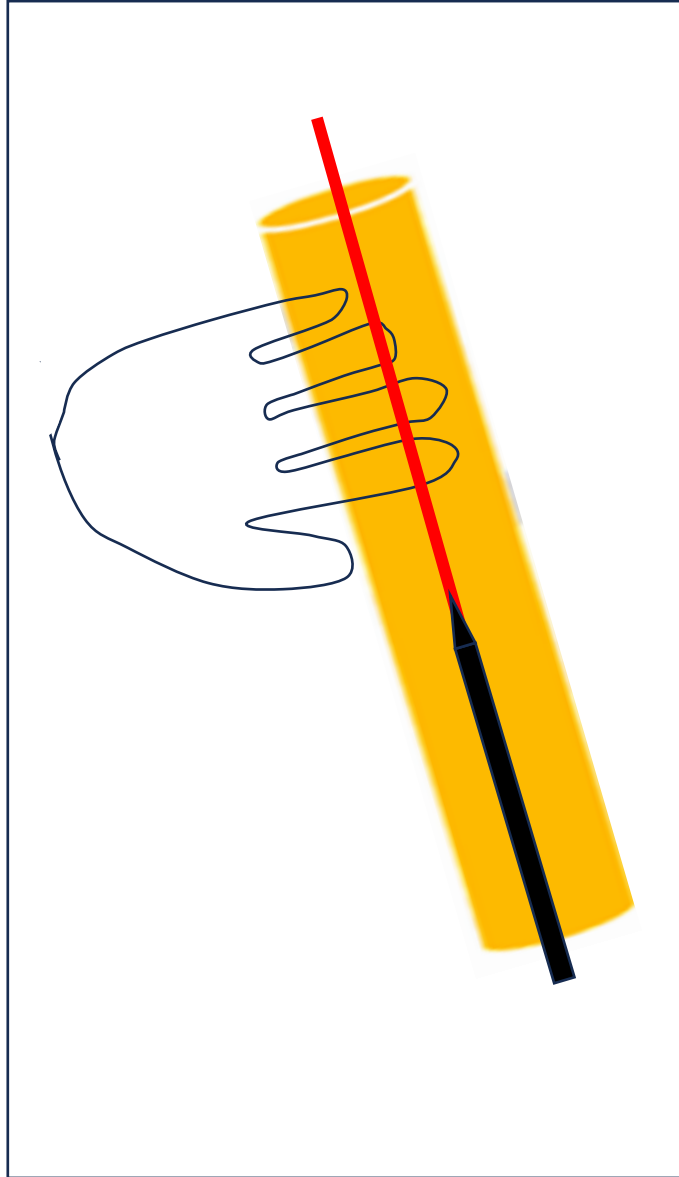
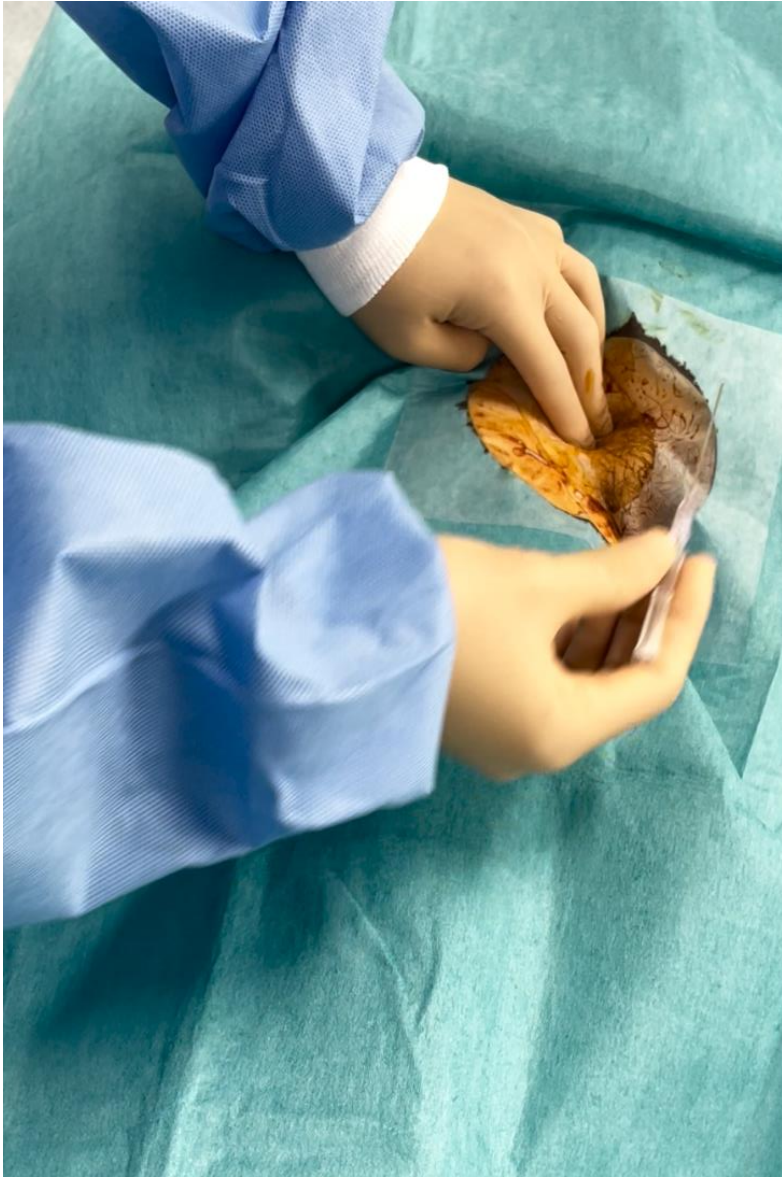


All systems are linked

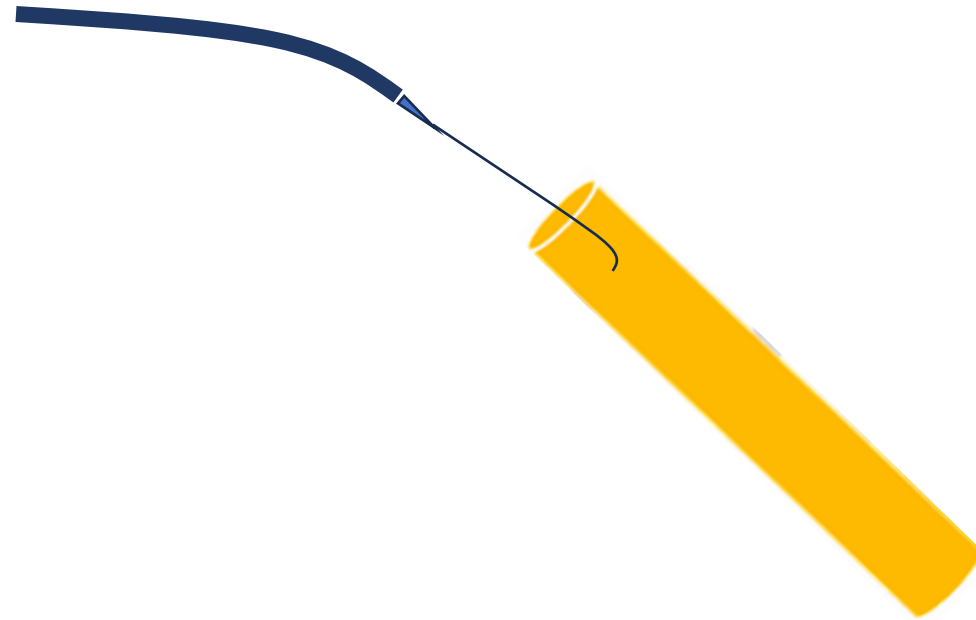
Puncture the femoral artery



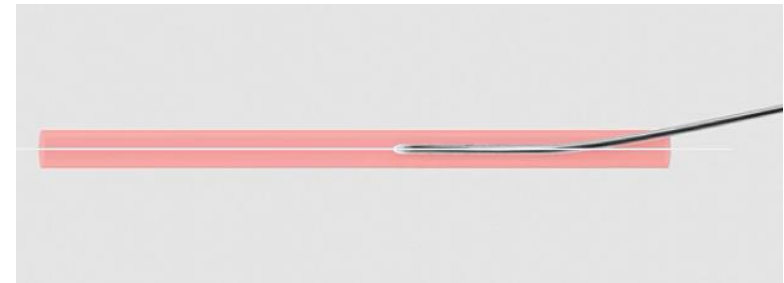
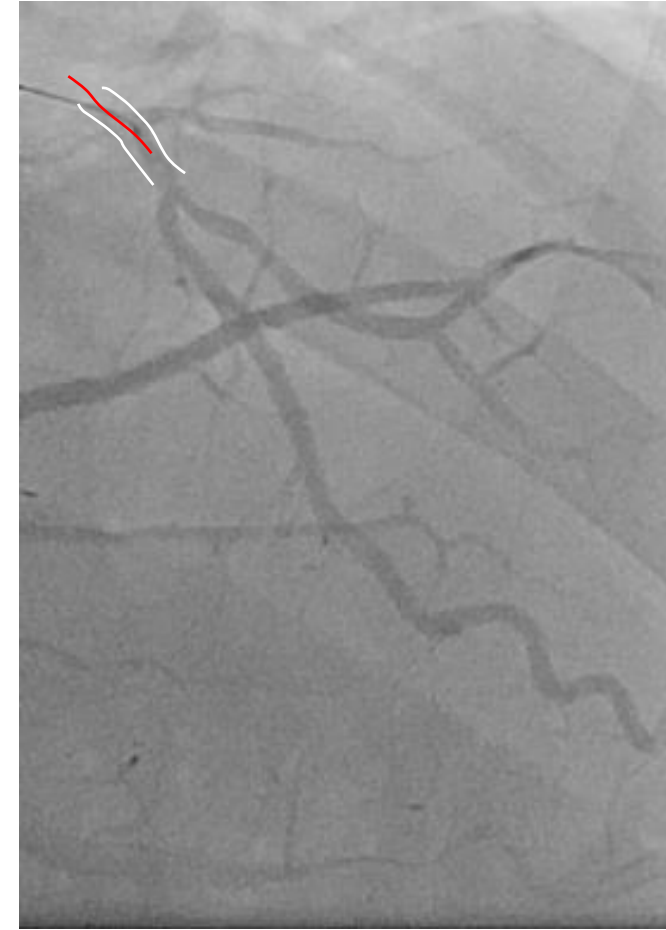
Puncture the femoral artery



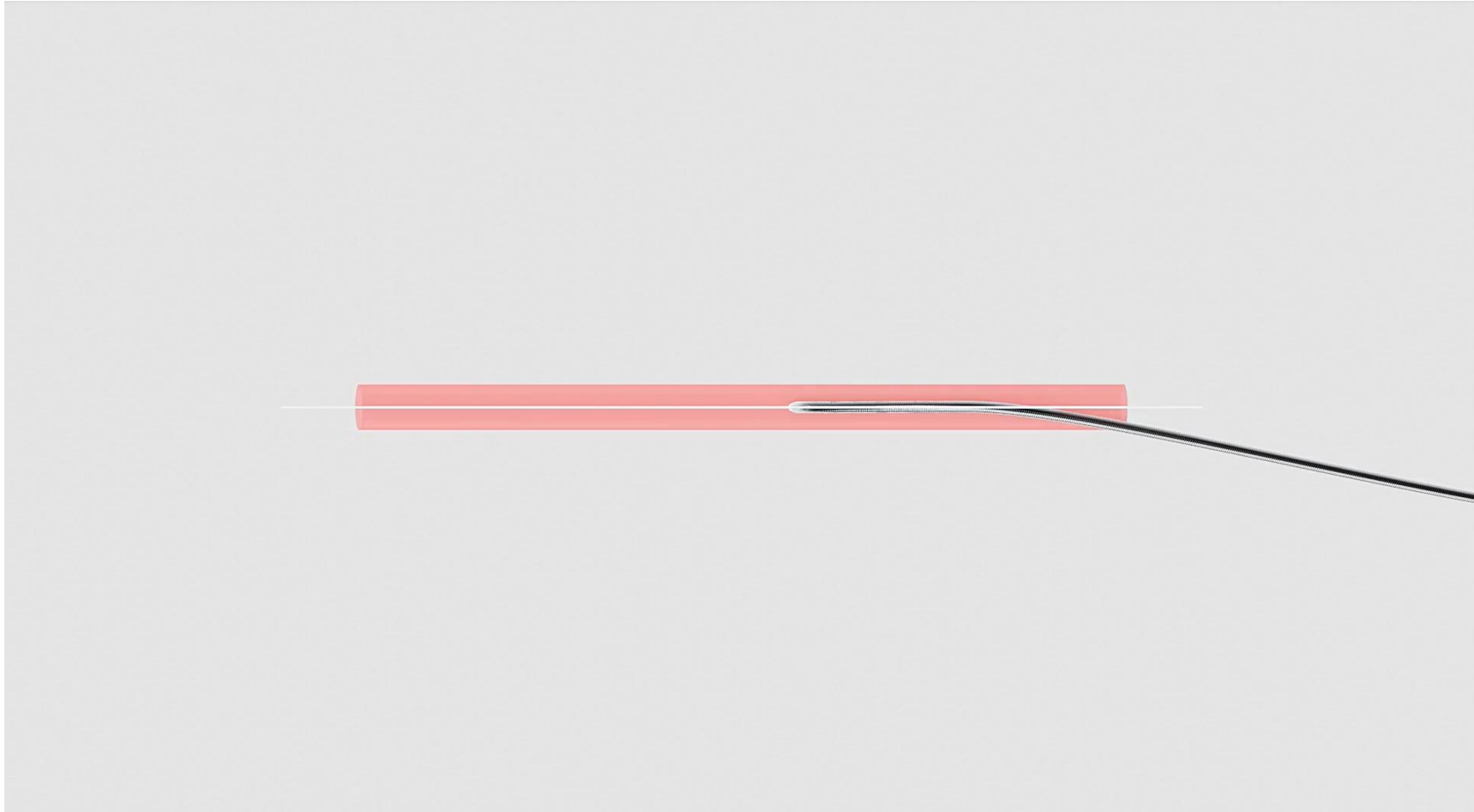
Antegrade GW crossing at CTO distal end



Penetration Plane method

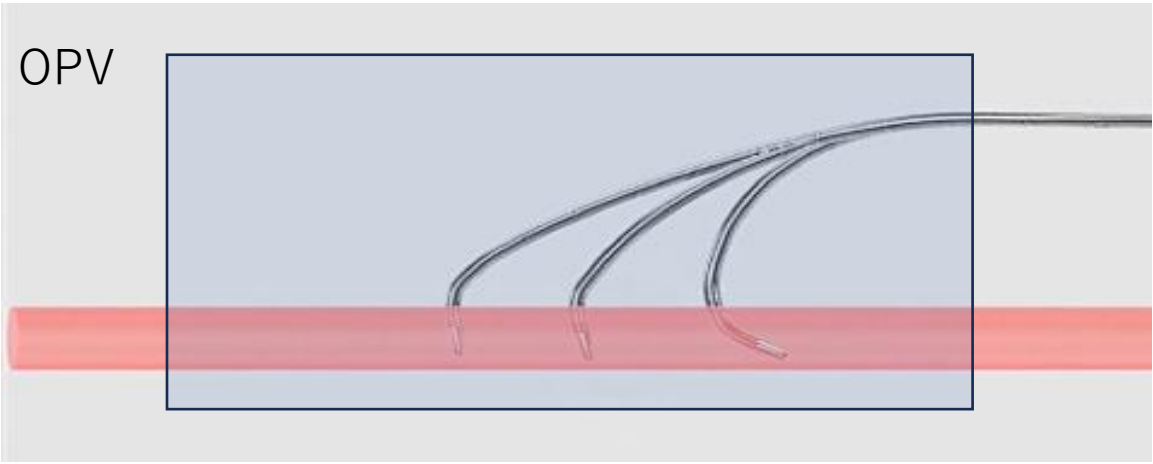
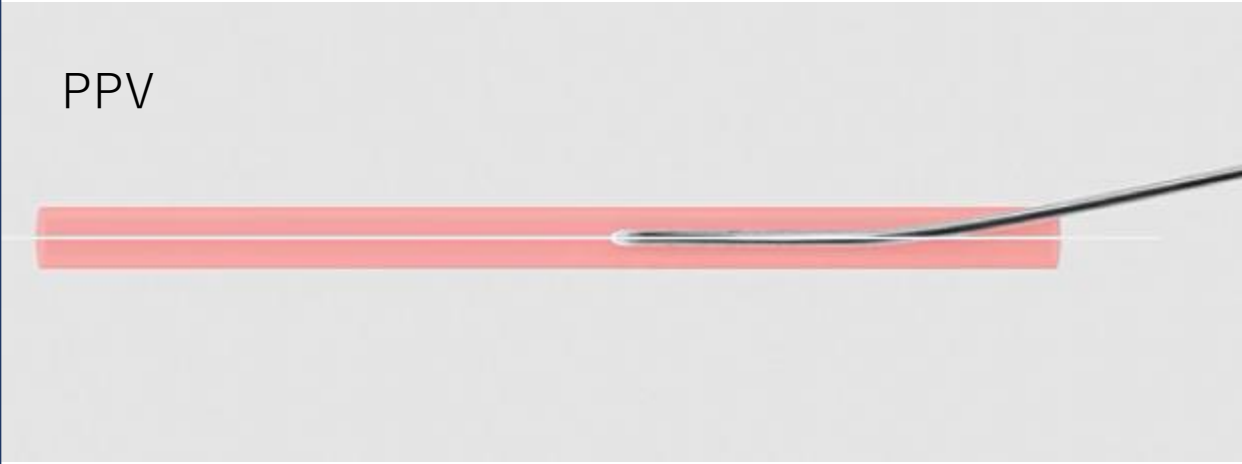


Rationale of Penetration Plane method wiring

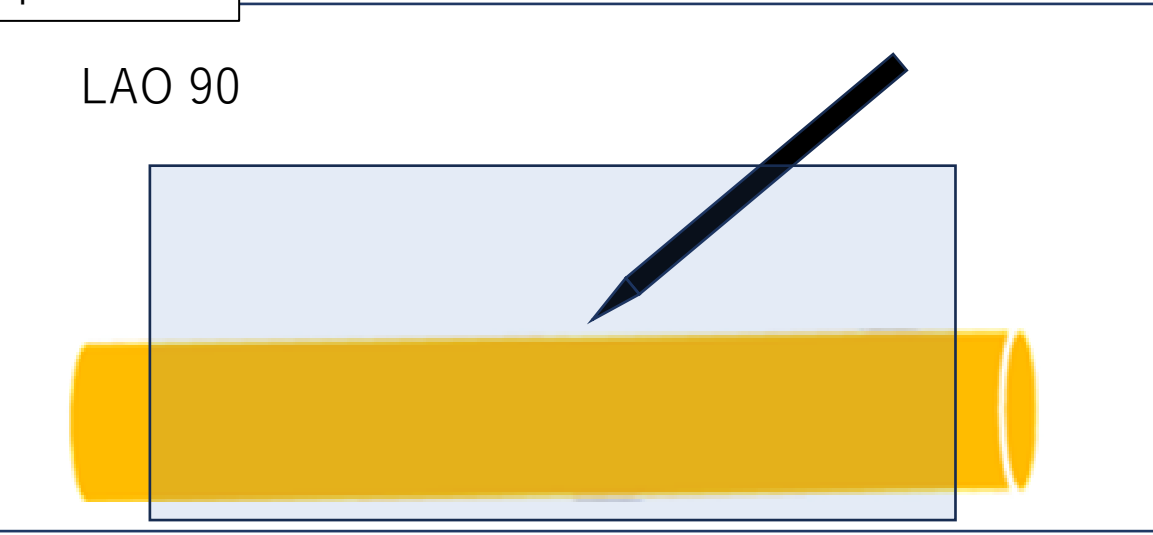
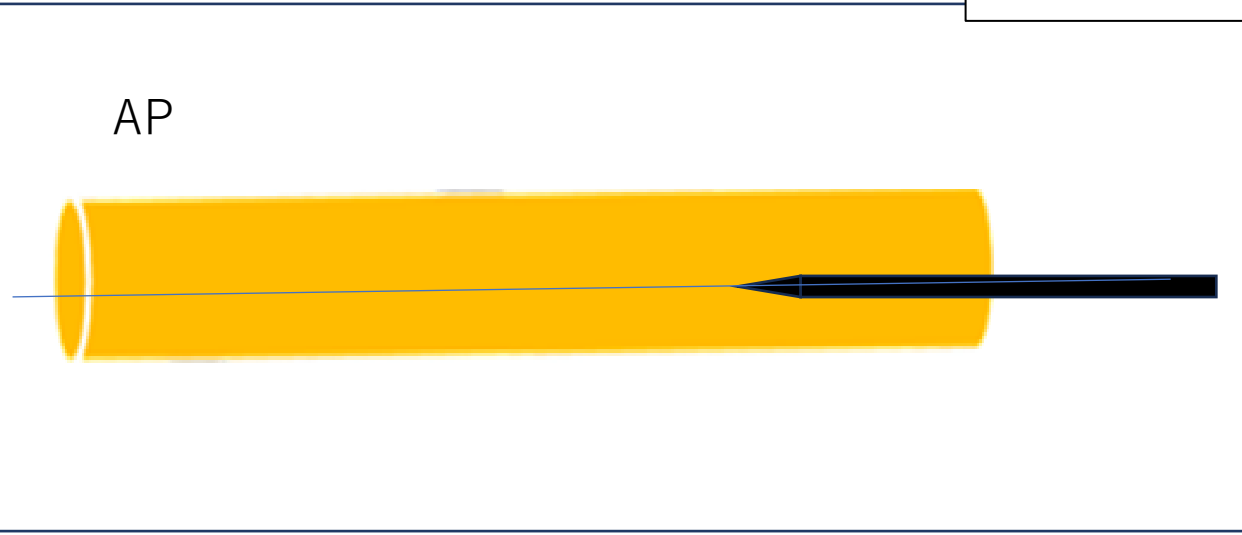


When approaching a vessel, the penetration plane is the plane in which the vessel appears straight; the penetration plane view is from a direction that makes the plane appear flat, so the guidewire will always appear straight. The view perpendicular to this plane is called the objective perpendicular view (OPV), and manipulating the wire in these two planes is the basis of the PP method.

Penetration Plane method

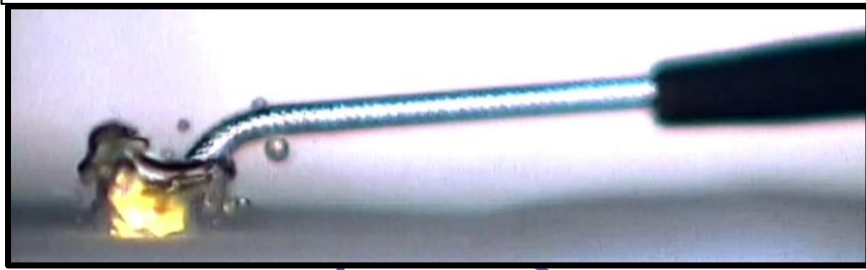


Femoral artery puncture

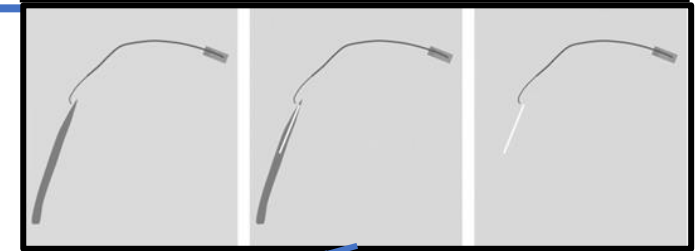


These will appear in the CTO PCI area in the near future

Plasma-mediated ablation (PMA) system

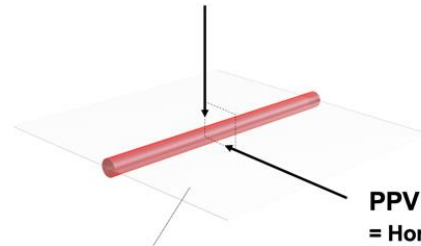


Distal true lumen mapping



Penetration Plane method

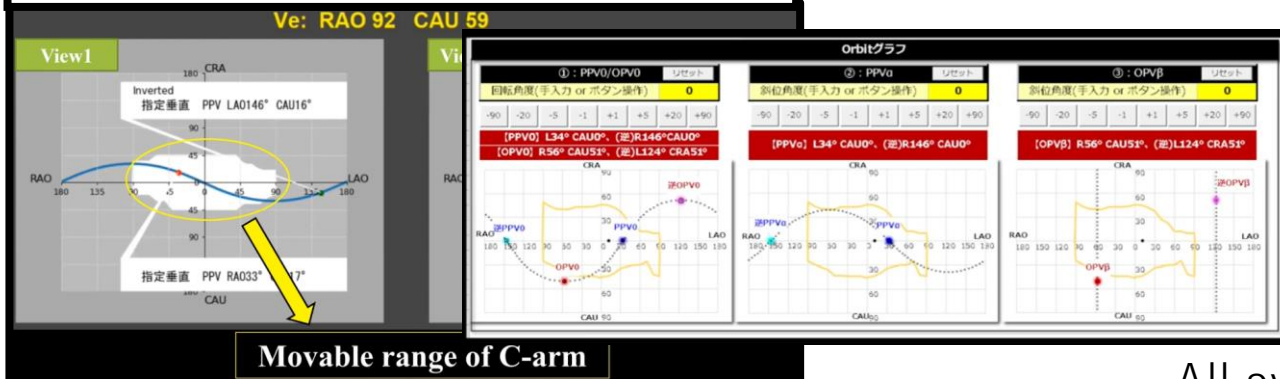
OPV (objective perpendicular view)
= Vertical view of the PP



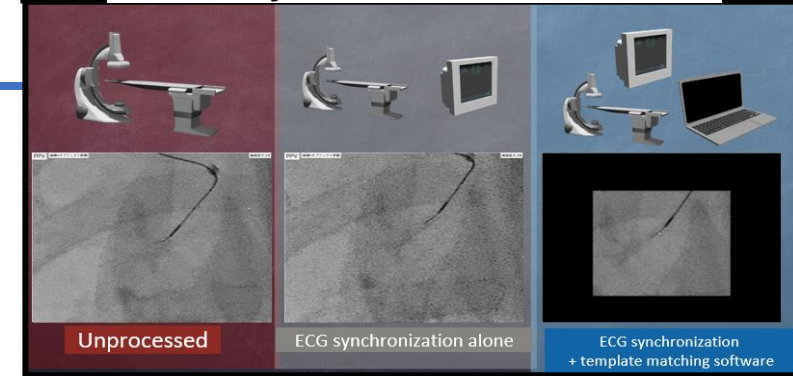
PPV (penetration plane view)
= Horizontal view of the PP

Penetration plane (PP)

Axis-vector analysis software

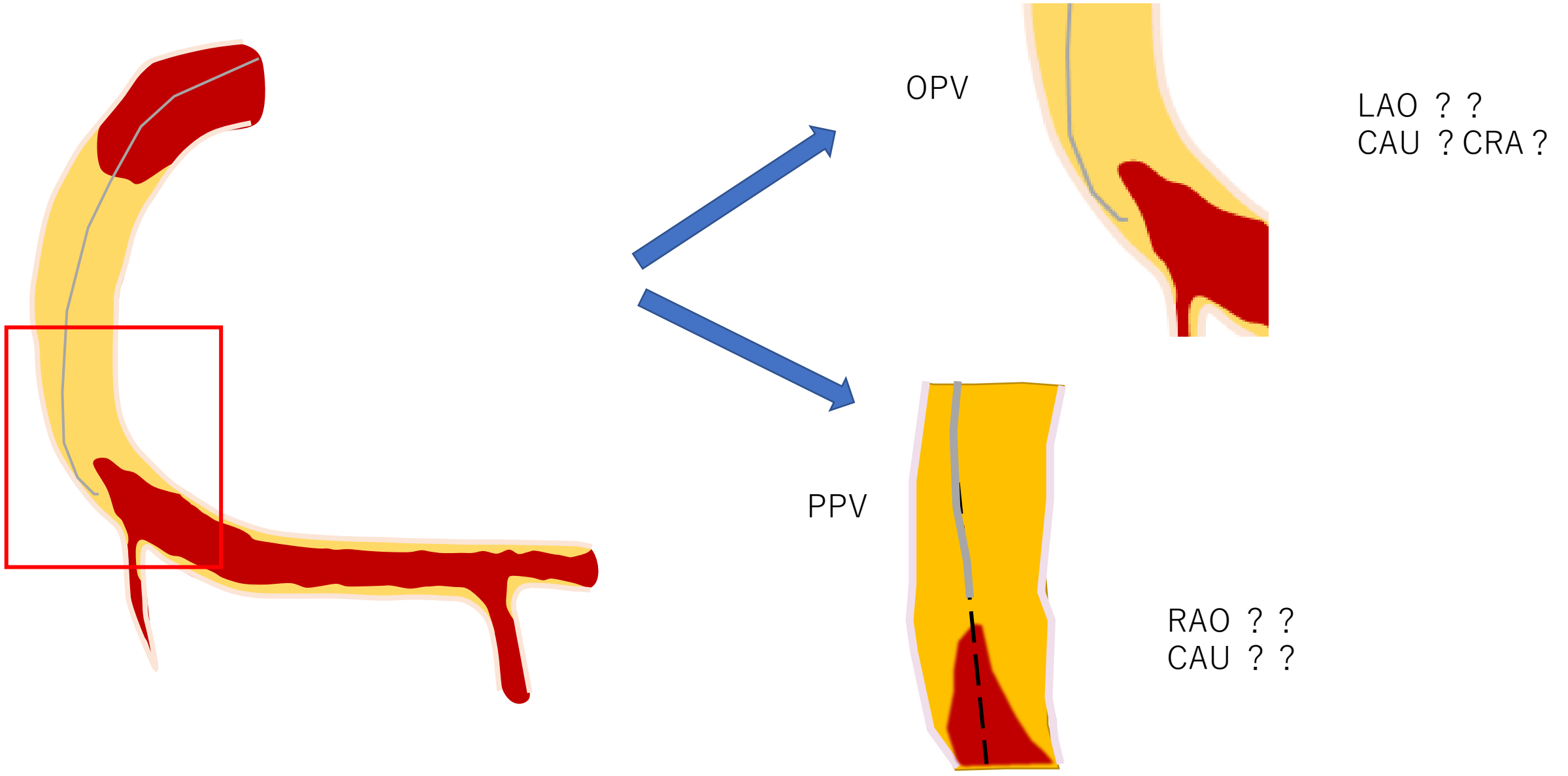


ECG-synchronized fluoroscopy



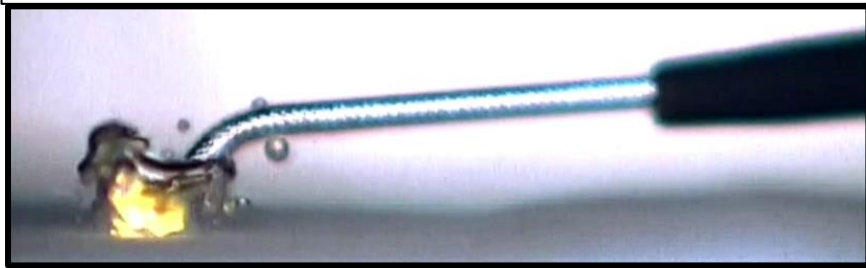
All systems are linked

Difficult to set PPV and OPV

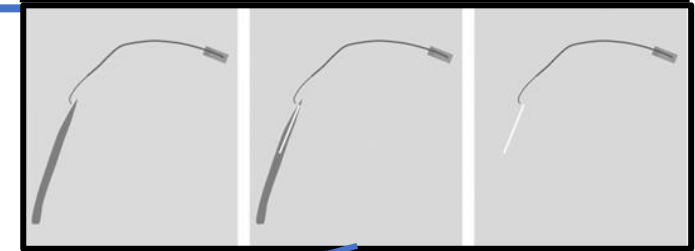


These will appear in the CTO PCI area in the near future

Plasma-mediated ablation (PMA) system

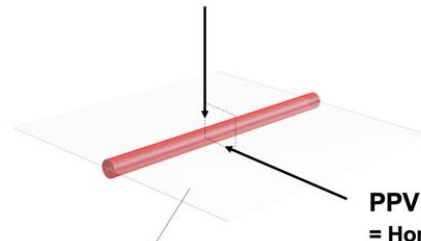


Distal true lumen mapping



Penetration Plane method

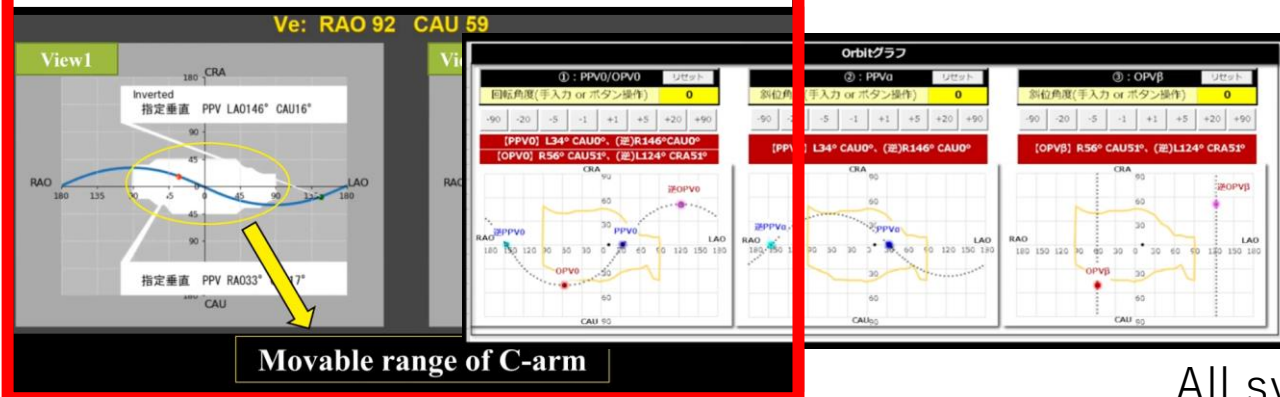
OPV (objective perpendicular view)
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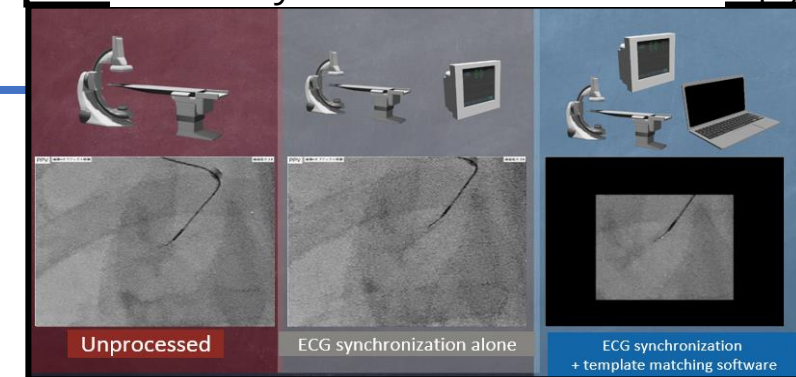
PPV (penetration plane view)
= Horizontal view of the PP

Penetration plane (PP)

Axis-vector analysis software



ECG-synchronized fluoroscopy



All systems are linked

ECG-synchronized fluoroscopy

non-synchronizing

Irradiate at the specified pulse rate

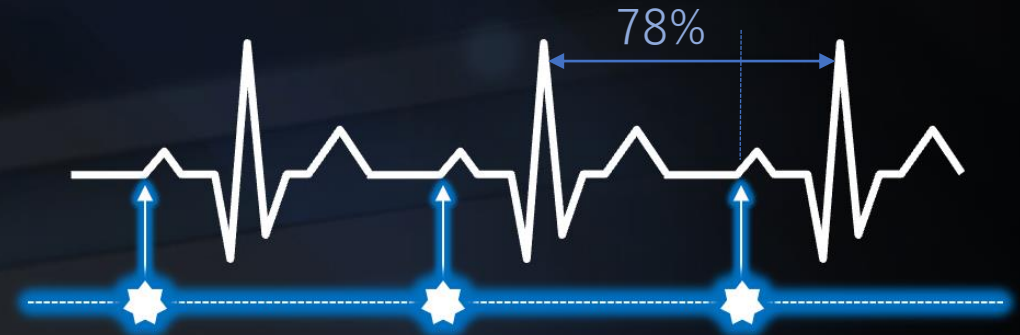


1 Heartbeat 7.5times irradiations

※HR 60, 7.5 fps

synchronizing

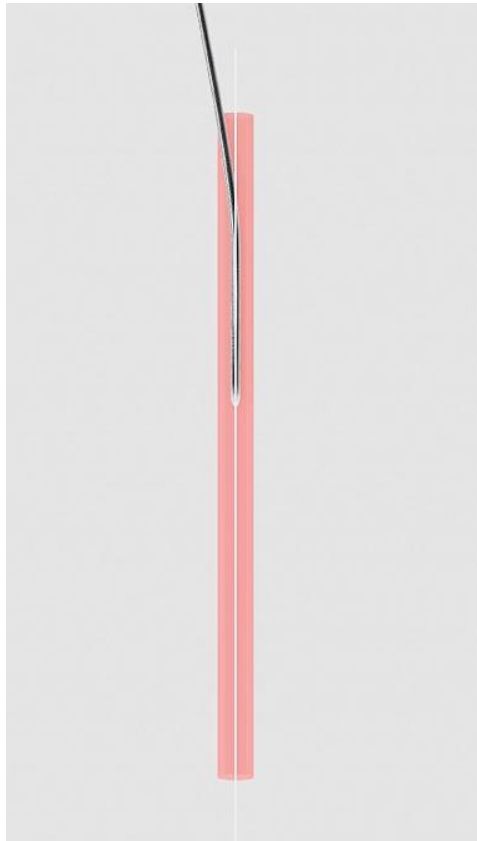
Irradiation at the same time phase linked to a heartbeat



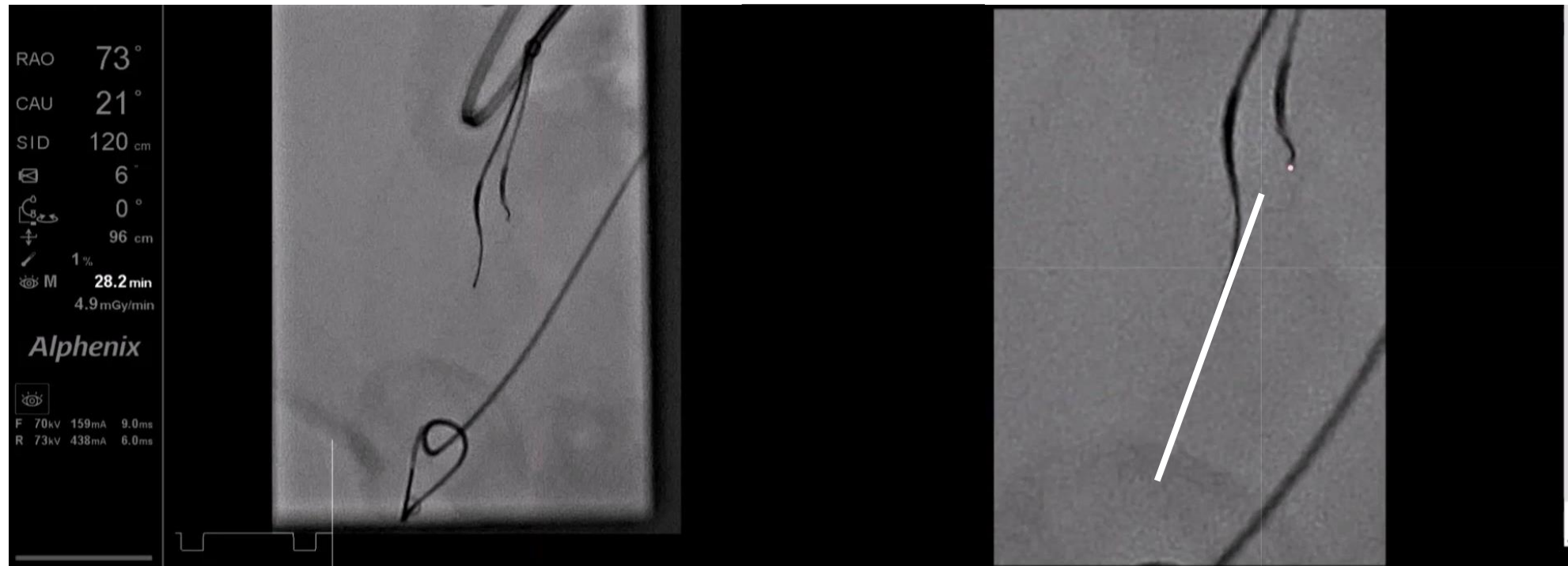
1 Heartbeat 1 times irradiations

To ensure the success of Penetration Plane method

If the heartbeat is stopped by the ECG synchronized fluoroscopy system, it is possible to draw a line on the distal true lumen and put the wire on the line, as described in the PP method.



The target line is displayed on the screen



ECG-synchronized fluoroscopy

non-synchronizing

Irradiate at the specified pulse rate



1 Heartbeat 7.5times irradiations

※HR 60, 7.5 fps

synchronizing

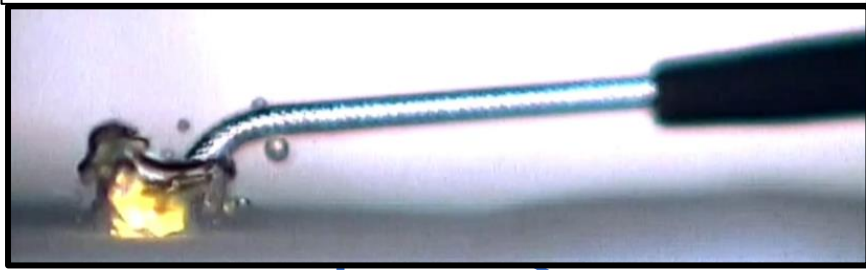
Irradiation at the same time phase linked to a heartbeat



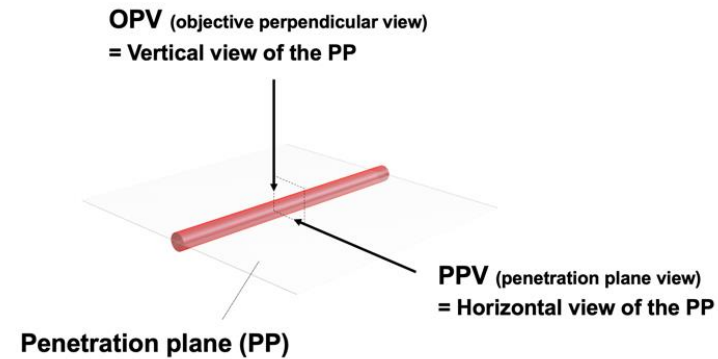
1 Heartbeat 1 times irradiations

These will appear in the CTO PCI area in the near future

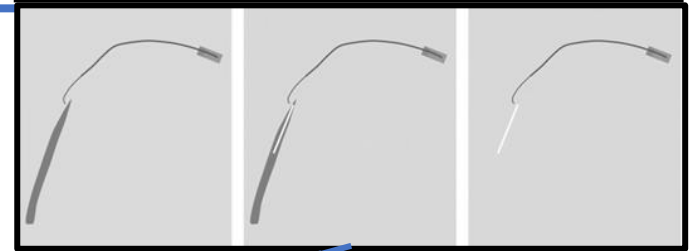
Plasma-mediated ablation (PMA) system



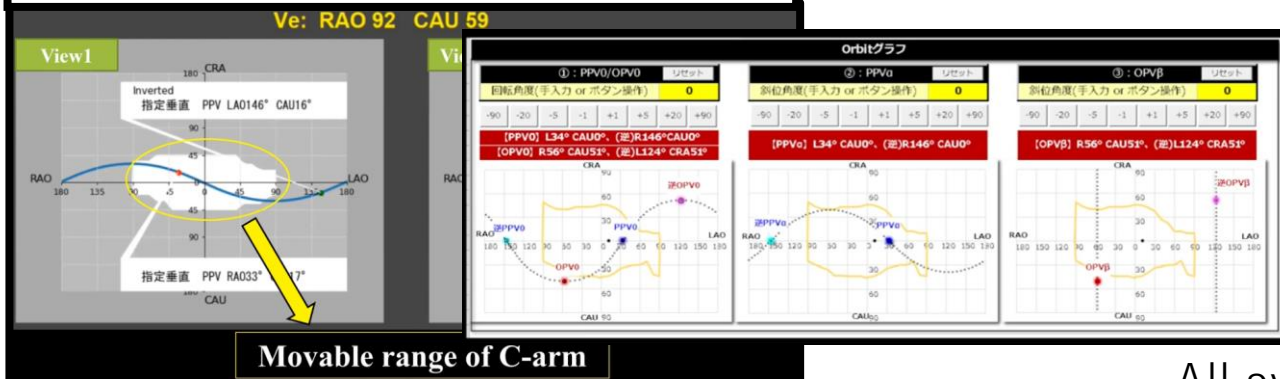
Penetration Plane method



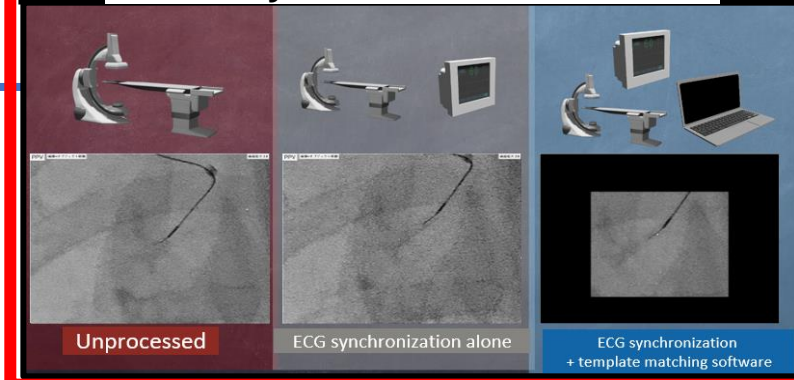
Distal true lumen mapping



Axis-vector analysis software

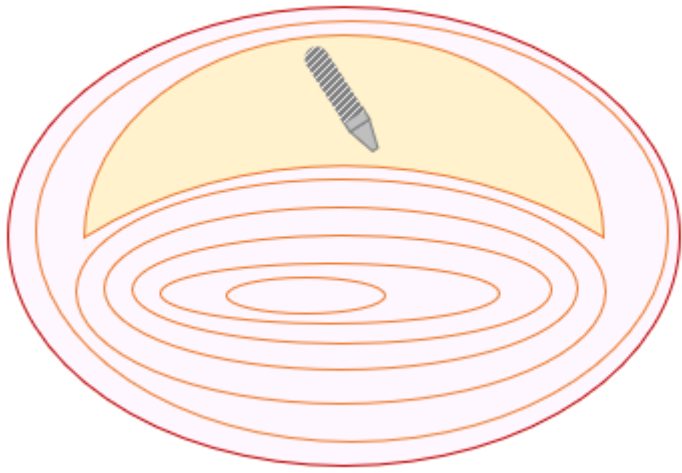


ECG-synchronized fluoroscopy

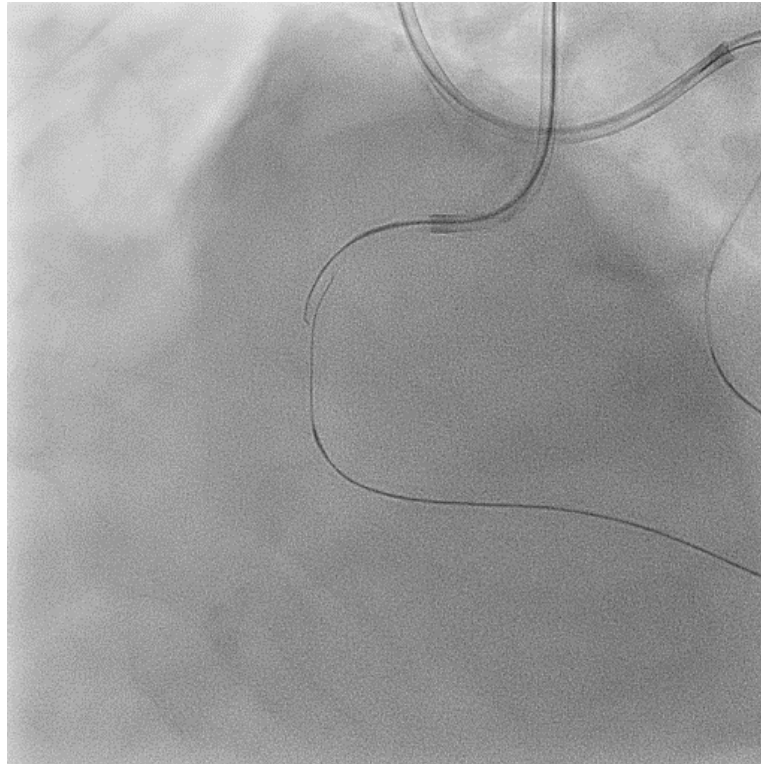


All systems are linked

Limitations of mechanical guidewire

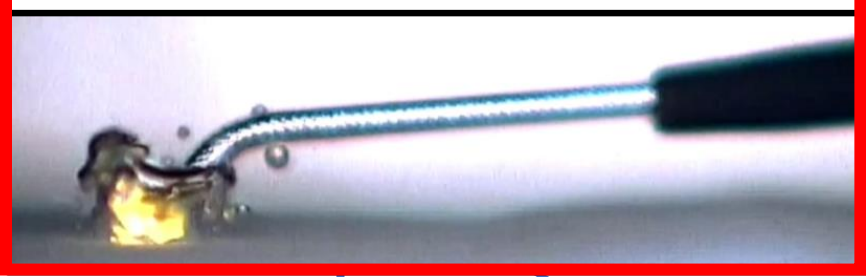


Mechanical GW could not
penetrate in the space

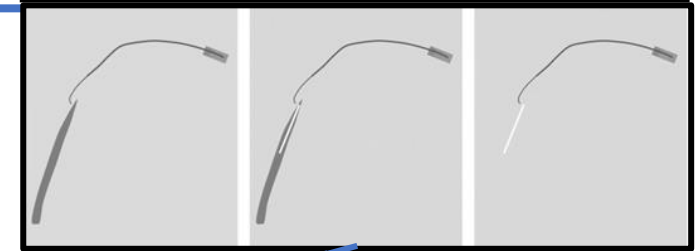


These will appear in the CTO PCI area in the near future

Plasma-mediated ablation (PMA) system

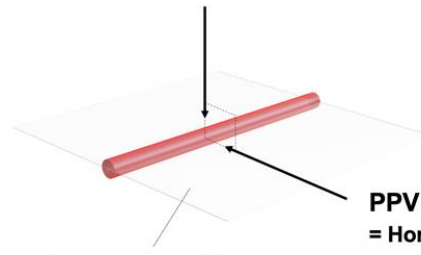


Distal true lumen mapping



Penetration Plane method

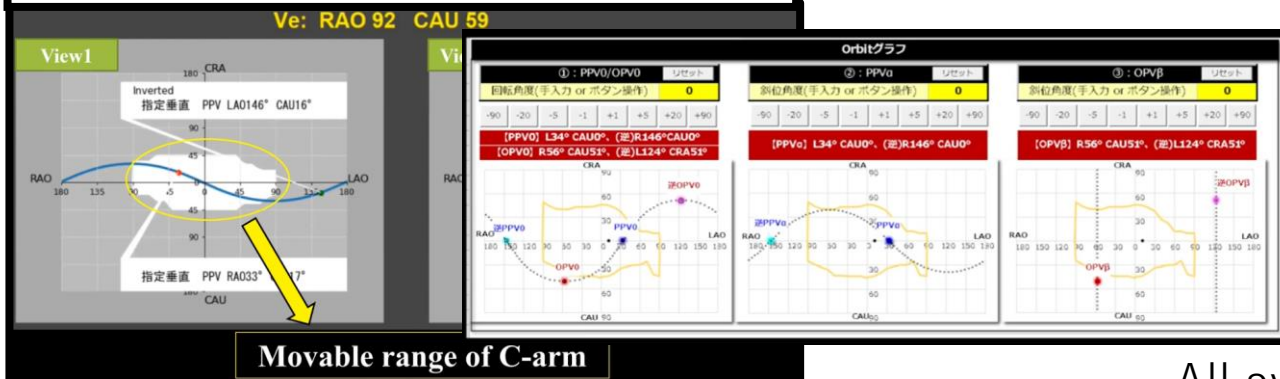
OPV (objective perpendicular view)
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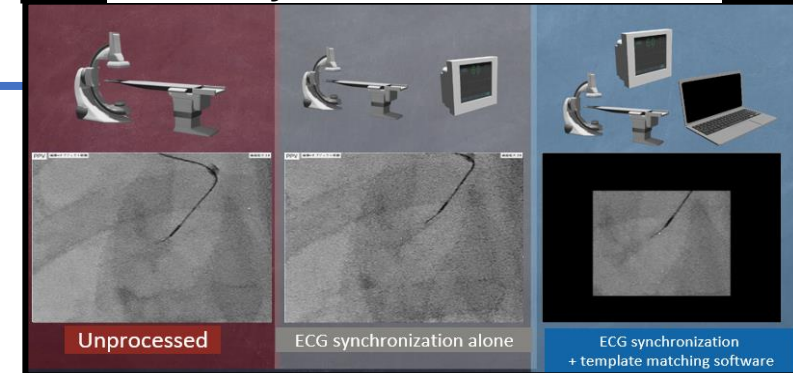
Penetration plane (PP)

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Axis-vector analysis software



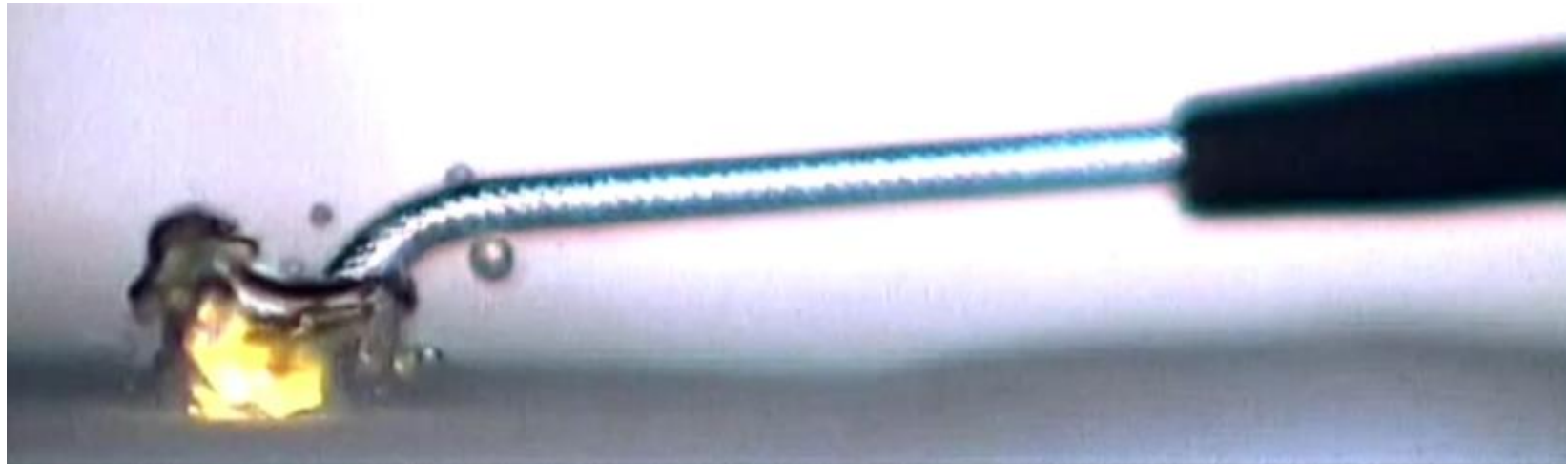
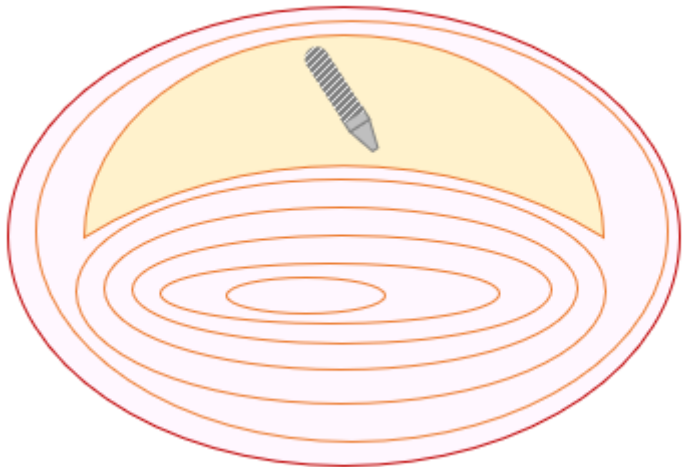
ECG-synchronized fluoroscopy



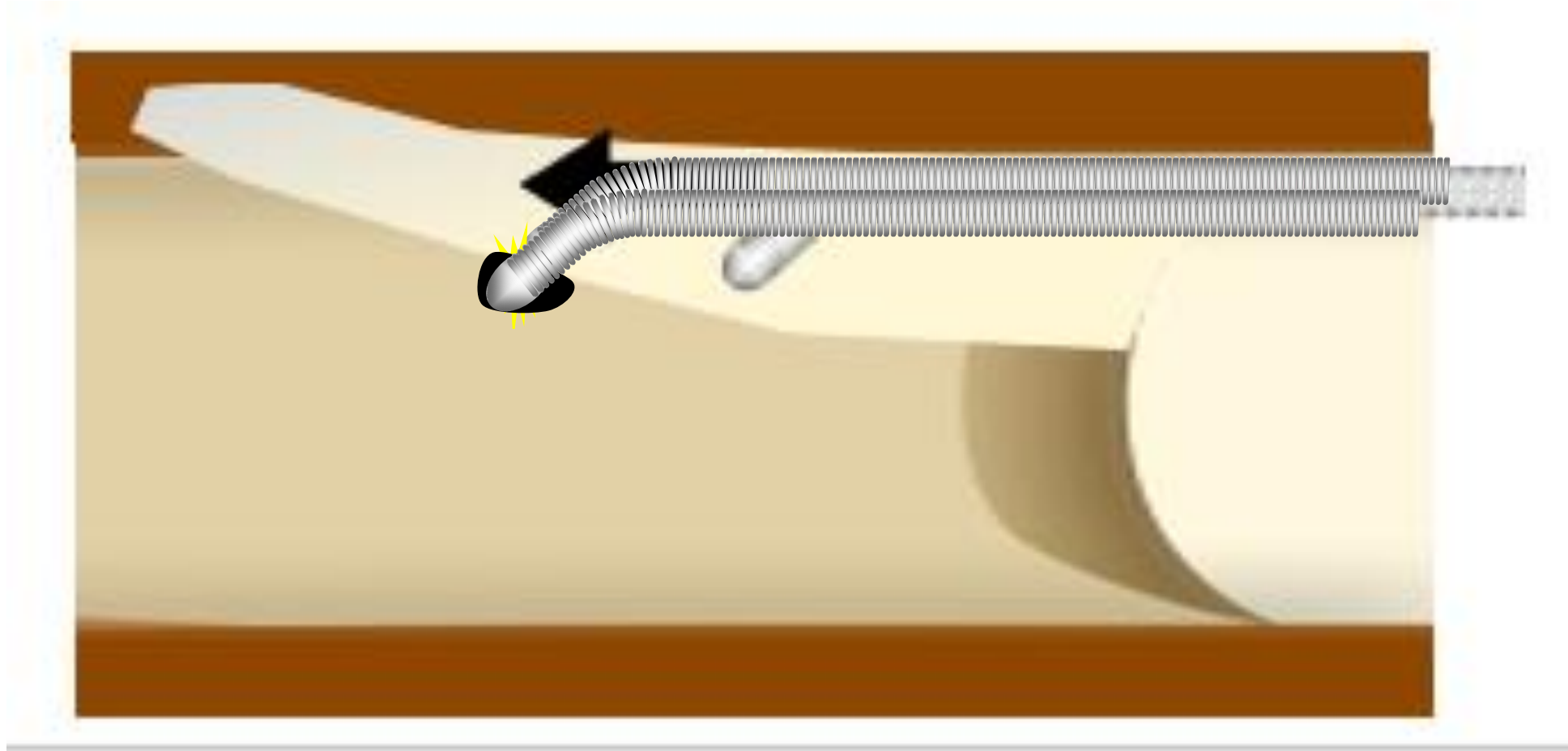
All systems are linked

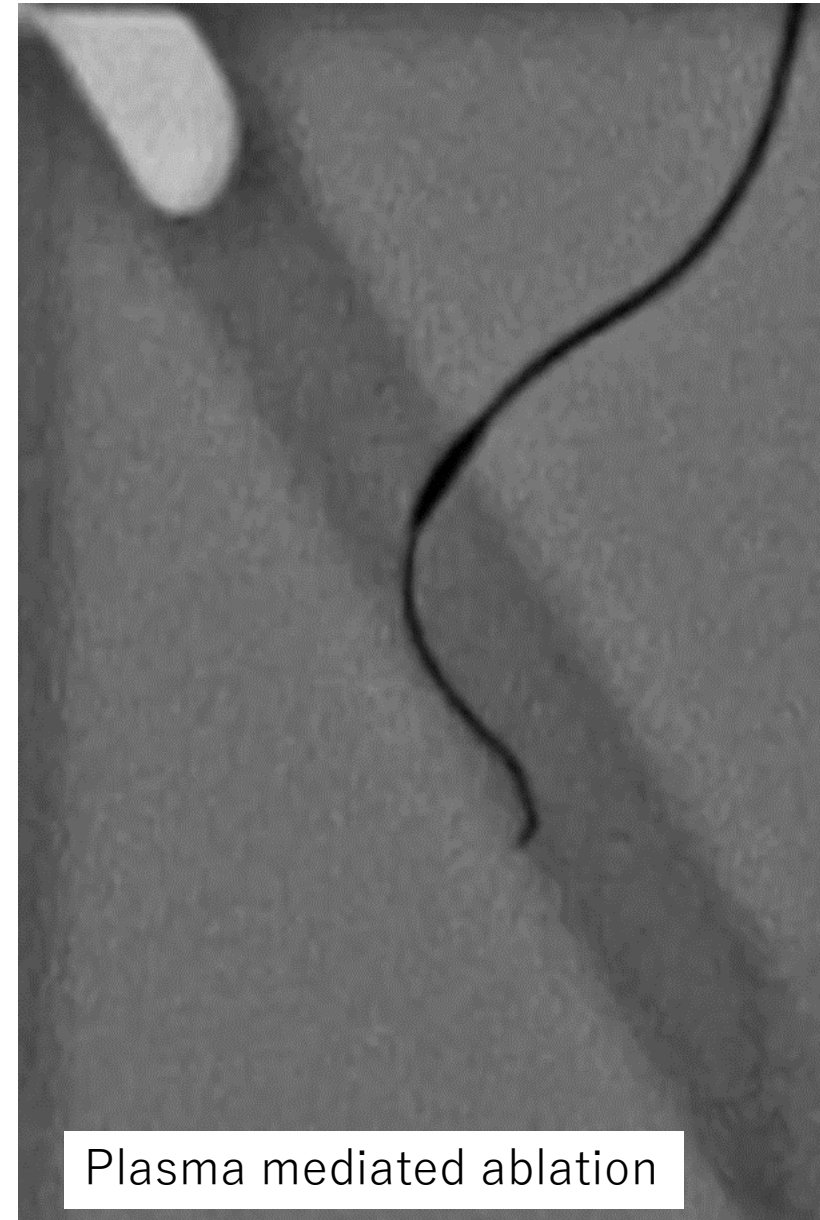
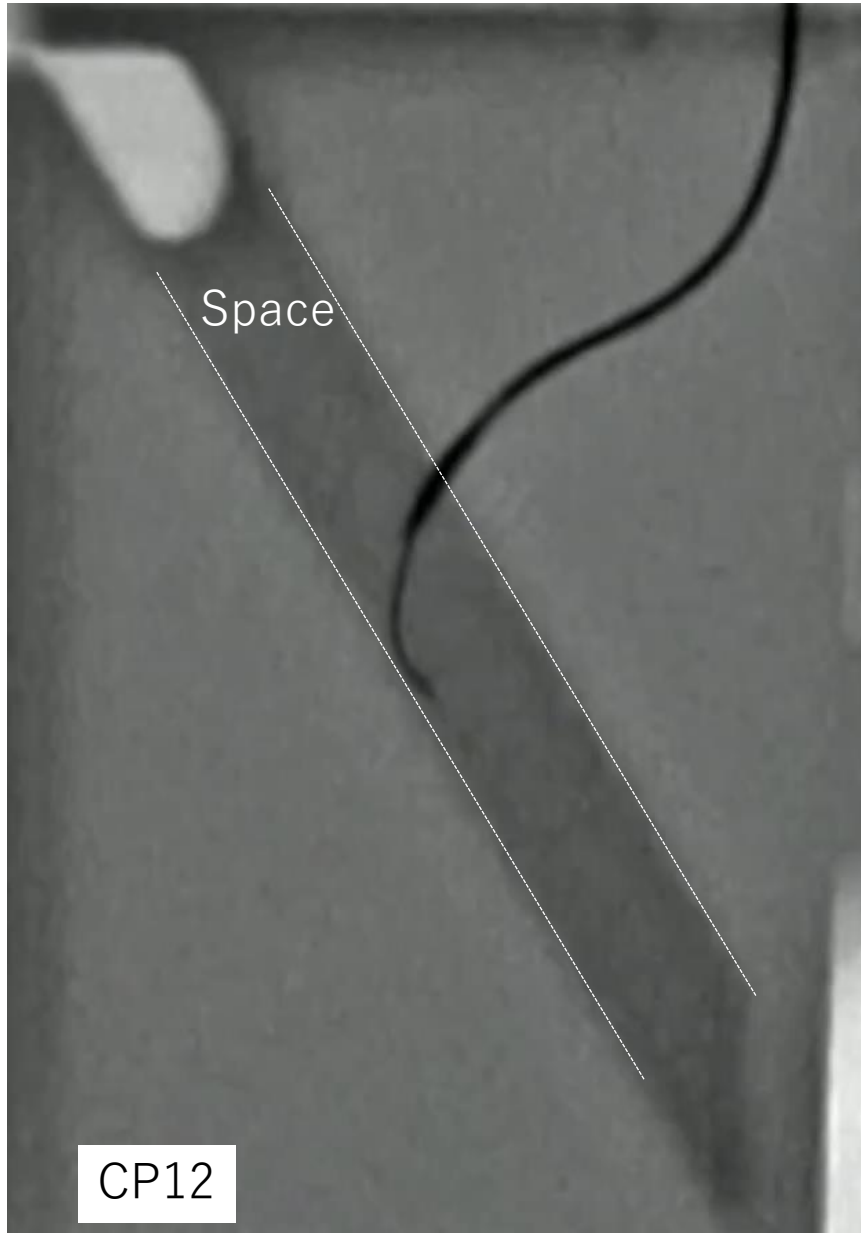
Why wire crossing is still challenging in CTO PCI?

- ▣ Although mechanical wires are improving day by day, there are still limitations that have yet to be resolved.
- ▣ To resolve the limitations, Plasma mediated ablation (PMA) system will come.



Plasma-Mediated Ablation System





Wiring by PP method

2023/03/06 13:57

Canon
%(Low)CAG 15... **F**

RAO 18°
CAU 24°
SID 120 cm
6°
0°
96 cm
1%

Alphenix

F 88kV 200mA 8.0ms
R 86kV 420mA 8.0ms

心拍数が変動しています
BaseとDelayを
確認してください

#023 23/23
FOV 6"
RAO 41° CAU 21°

B 0
C 4095
SF H03
Z x1.0
Zoom Off

真腔線
ベクトル:
RAO 41 CAU 21
--RAO-- LAO--
--CRA-- CAU--
アノテーション:
中央ライン:
白 黒 OFF
透明度 75
登録1 (PPV) 登録2 (OPV) 登録3 (View3)
PPV 保存完了 自動切替
画像静止プログラム:
ON OFF
画面拡大 x2
P: OFF
真腔ライン: ☐
ガイドライン: OFF
Pgs: ☐
PPV: ☐
任意ベクトル: ☐
基準点: ☐
アノテーション: ☐

8/19
5.34s

RAO 26 CAU 24
PPV

Summary

- ❑ Now, Conquest ST & Terumo anteOwl IVUS contribute to Tip Detection IVUS guide ADR.
- ❑ Plasma-mediated ablation system and their related devices have been developed and clinical trials have started.