April 22 2014 , TCT-AP, COEX, Seoul, Korea

April 22 12:22 PM ~ 12:34 PM CTO Theater

Level 1 CTO Session III

Experts' Lectures & Case Presentations with Lunch CTO-PCI:

Paradigm for Wire Selection and Technique

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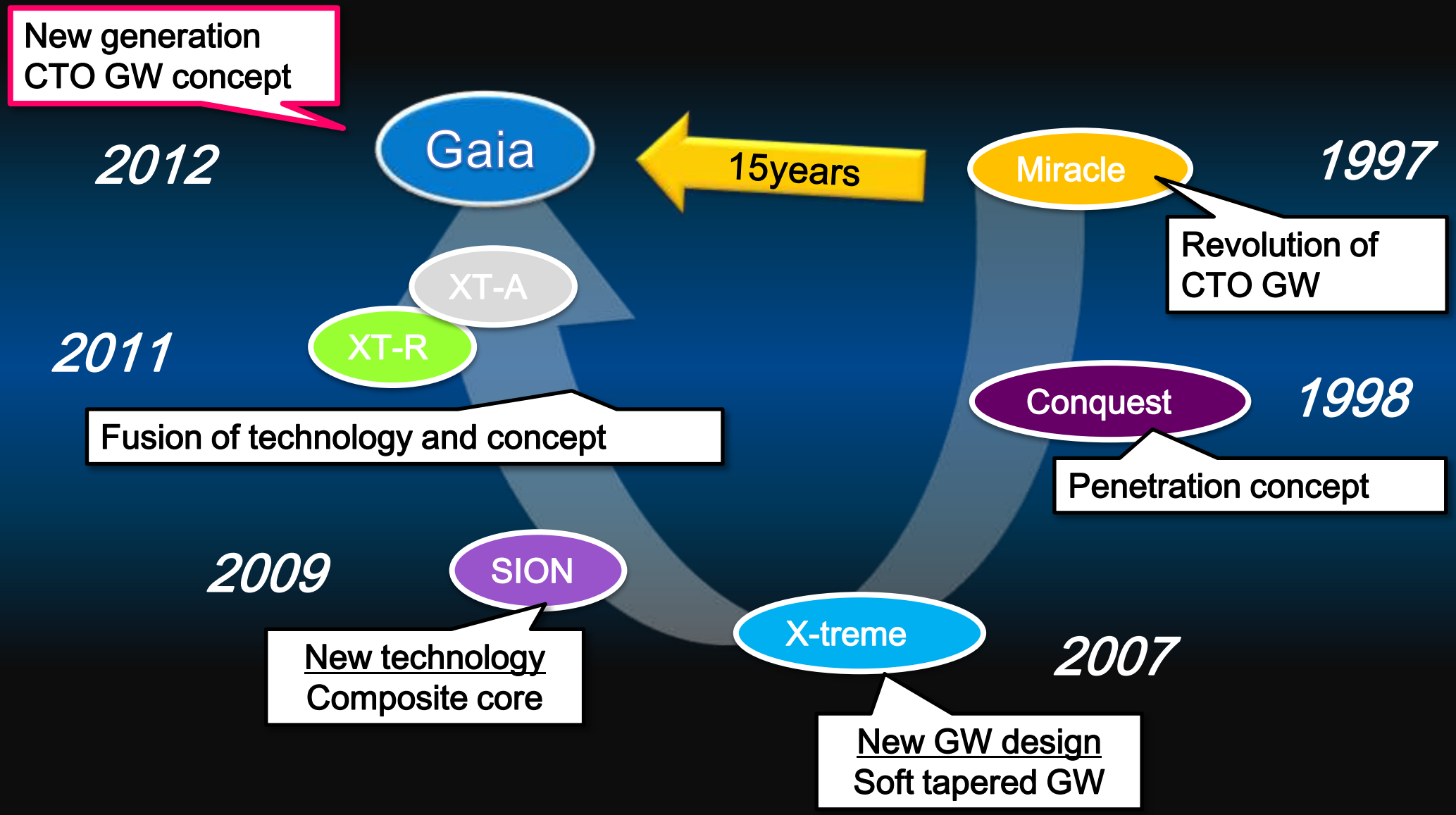
Limitations of Current CTO PCI

- Uncertainties of Guide wire passage
  - Major factors of Guide wire failure
    - Undefined route
    - Calcification/Hard Fibrous plaque
    - Subintimal Dissection/ Hematoma
  - Unpredictable procedure time
    - Radiation time
    - Contrast volume

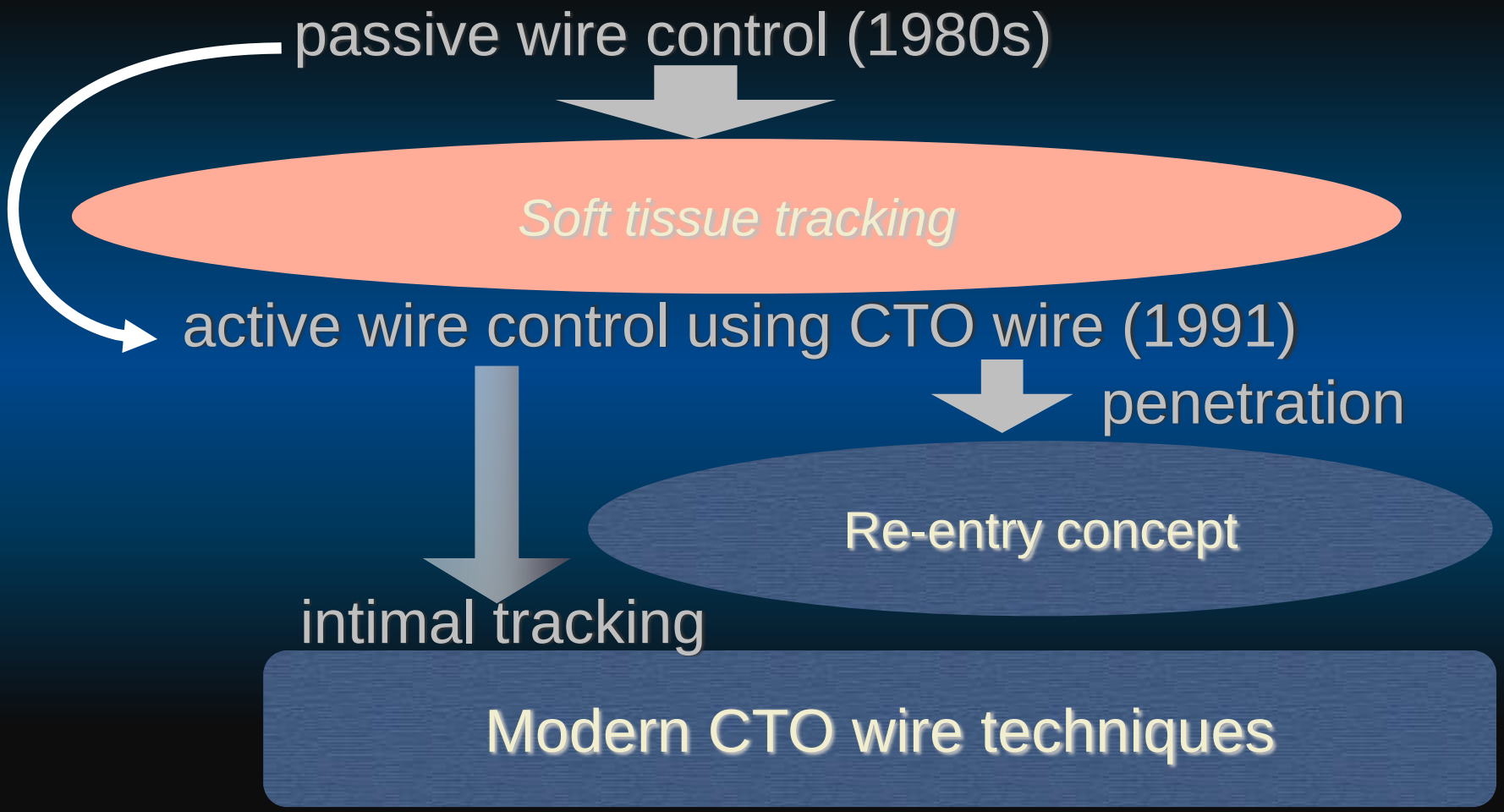
Tipping Point in Antegrade Approach

- **Efficacy of Fielder X-treme/Corsair as an initial choice (*step by step approach*)**
- **Recognition of the penetrability and flexibility for the wire tip （Loose tissue tracking）**
- **GW control relies heavily on not only torque, but also torque response at the tip**
- **Momentum for Next generation CTO wire**
  - **Relation of wire flexibilities and torque response**
  - **Realization of Higher penetrability without sacrificing flexibility**

Gaias are new generation wire



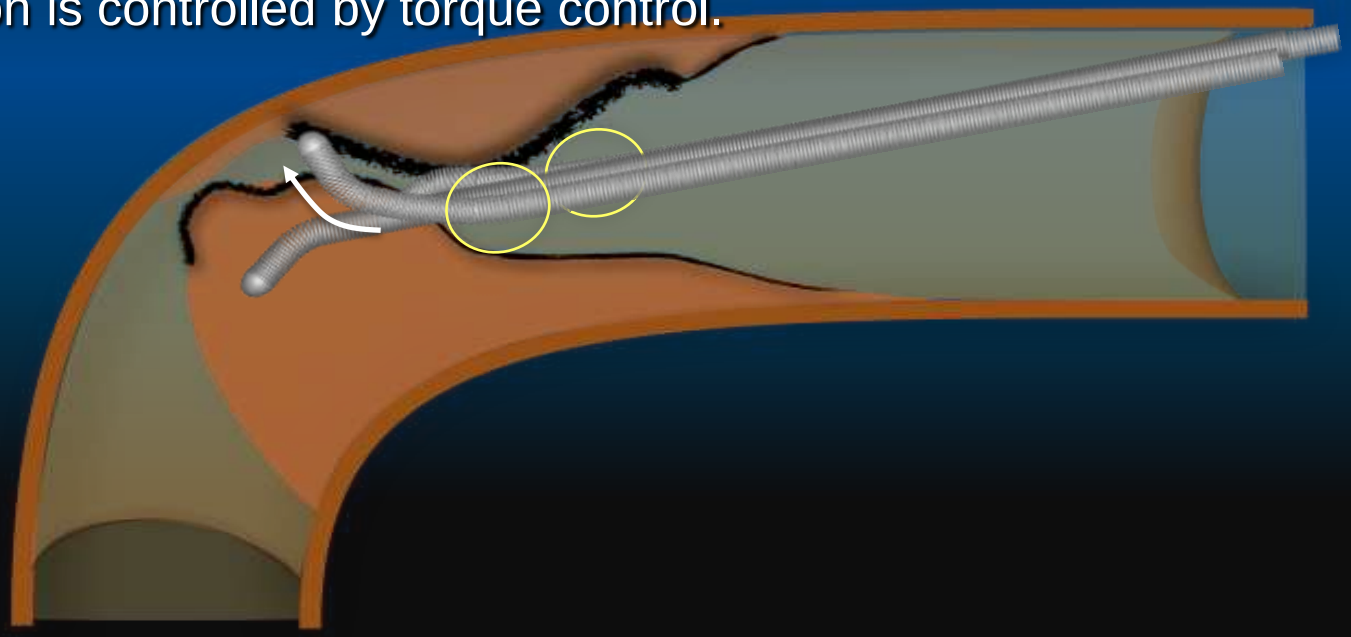
Evolution of CTO Recanalization Concept



Mechanism of Deflection Control

- Deflection is influenced by difference in compliance between bordering tissues.

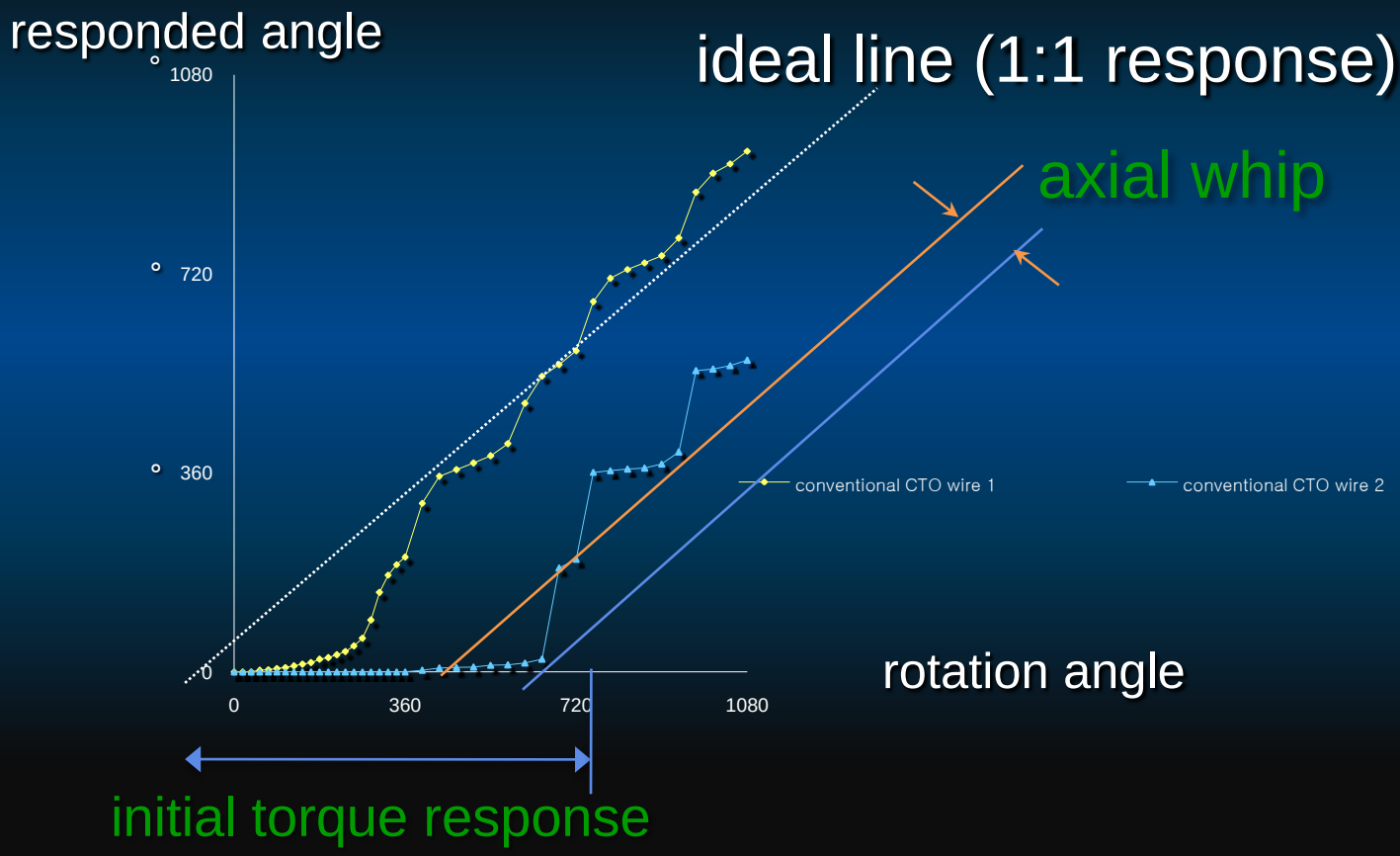
- Deflection is controlled by changing approach angle to the tissue which is intended to penetrate (torque control).
- Penetration is controlled by torque control.

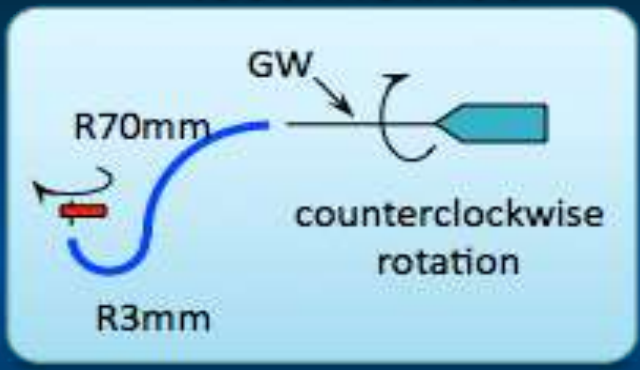


Factors Influencing to Wire Deflection

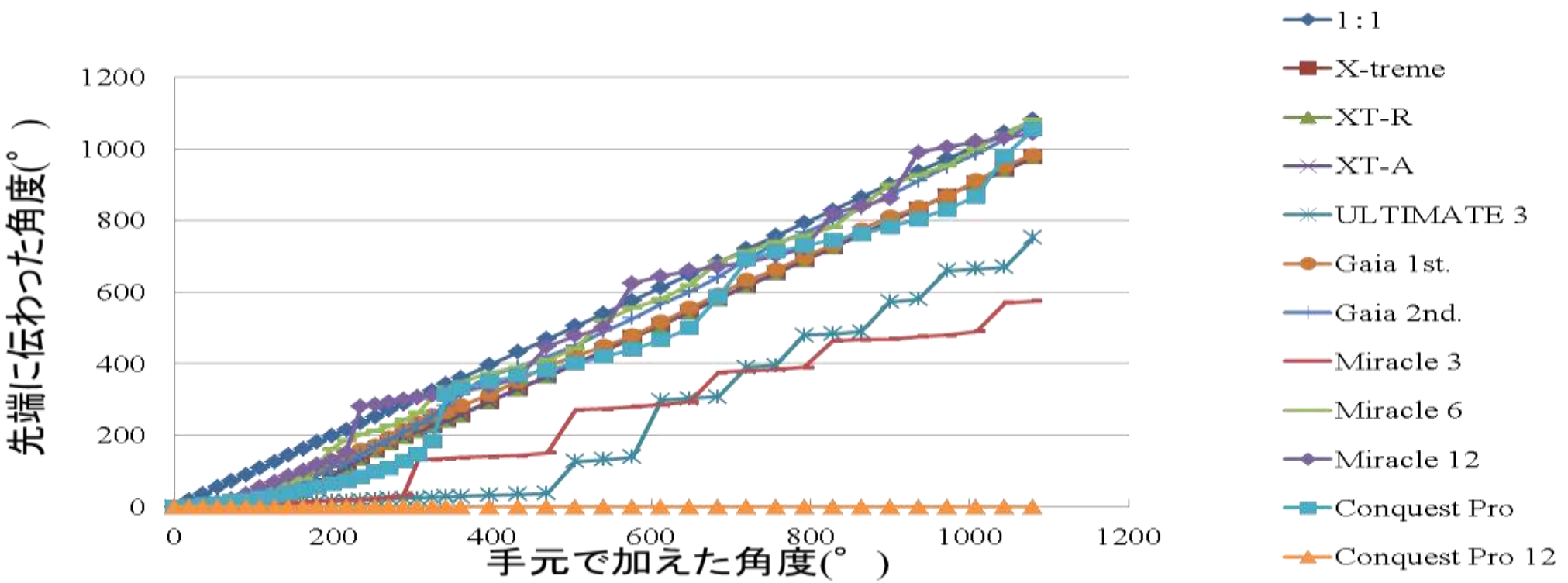
influence factors	
Wire Properties	tip profile
	coating at tip (hydrophilic)
	tip curve
	tip load
	stiffness transition at tip
Tissue Factors	tissue compliance
	tissue homogeneity
	difference in compliance between bordering tissues
	approach angle to tissue
	tissue surface

Linearity of Torque Response



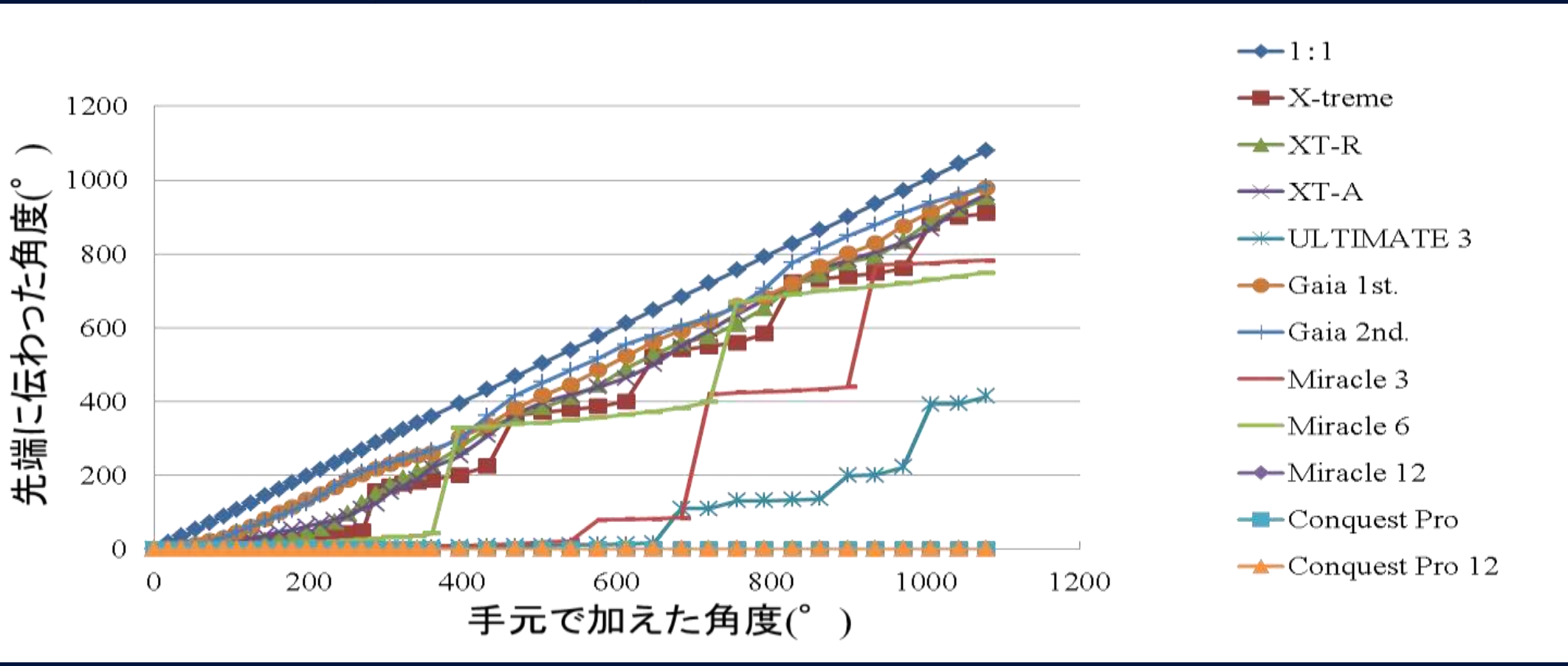


Torque Response Test R=5mm



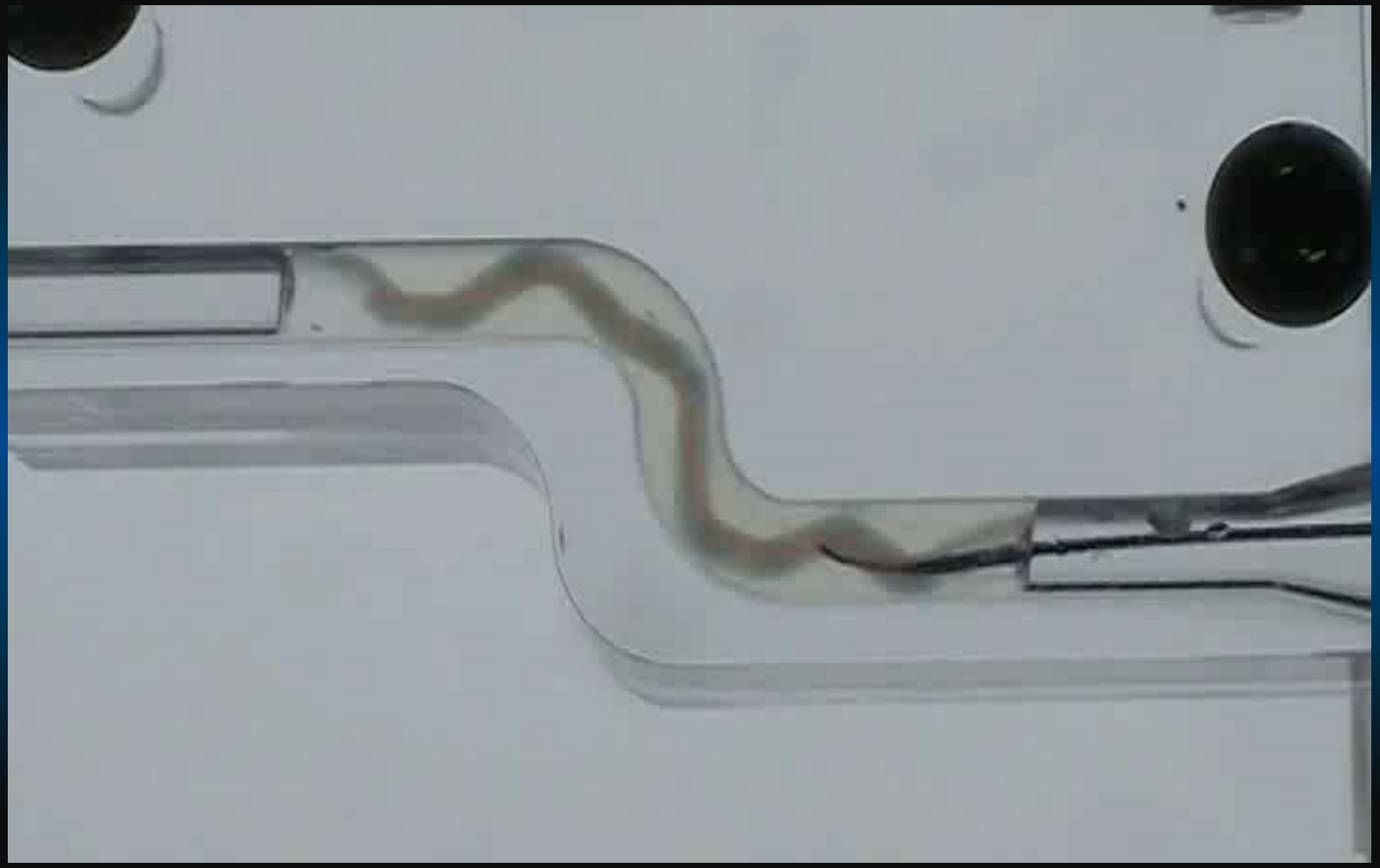
Torque response

Torque Response Test R=3mm



Torque response

ULTIMATEbros 3g



Axial Whip motion

GAIA First

No Axial Whip motion

Difference in Torque Response

Polymer-filled wire 3g
(flattened core)

remarkable delay of
Initial torque response
with axial whip

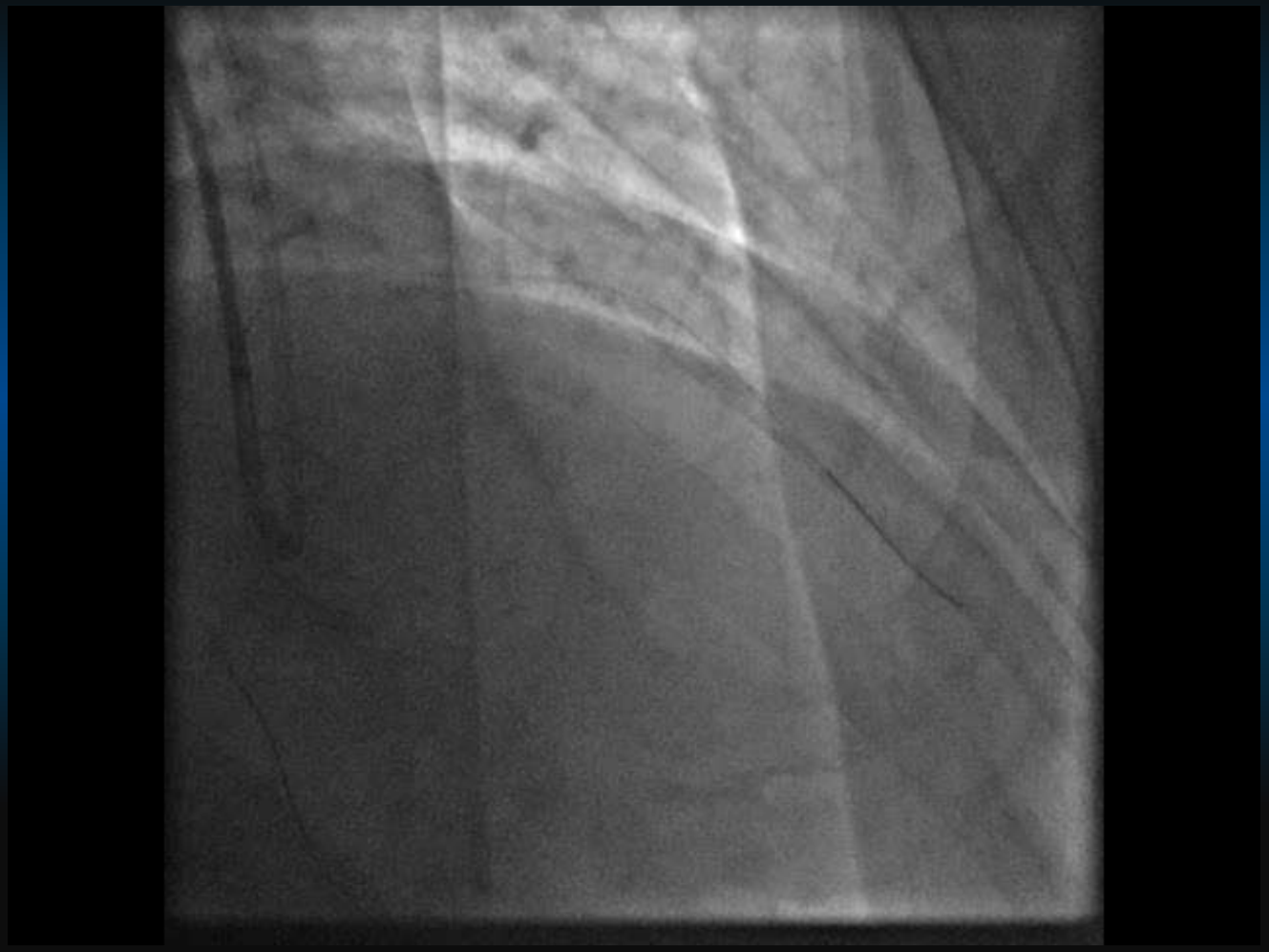
Ultimate 3g
(flattened core)

better Initial response
with remarkable axial whip

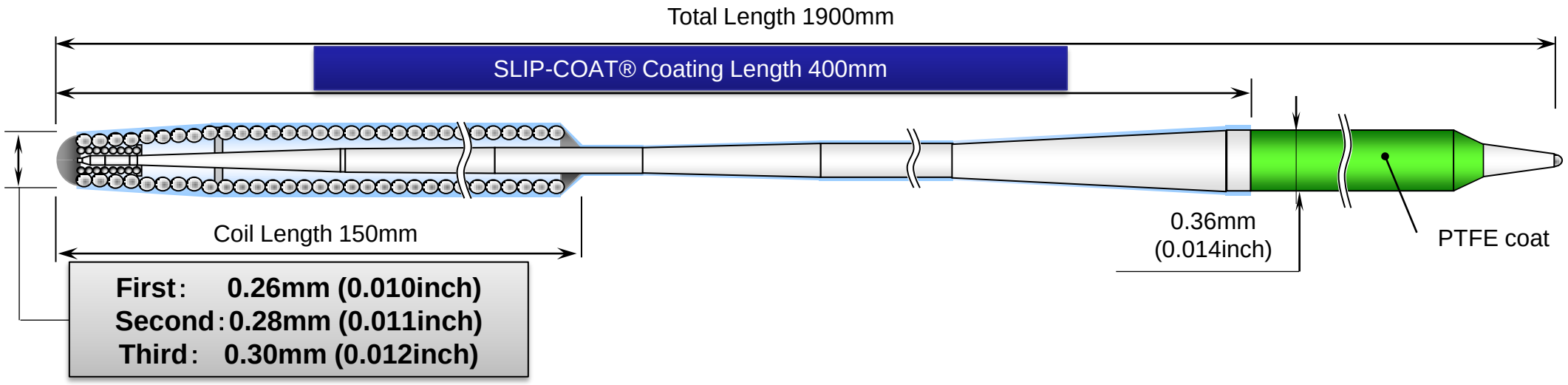
Next generation wire 3.5g
(non-flattened core)

no initial delay
no axial whip

LAD Ca CTO



Spec of Gaia



Various lineups for the different situation or lesion

ASAHI Gaia First	Diameter : 0.26mm (0.010”) - 0.36mm (0.014”) **Tip load : 1.7gf**
ASAHI Gaia Second	Diameter : 0.28mm (0.011”) - 0.36mm (0.014”) **Tip load : 3.5gf**
ASAHI Gaia Third	Diameter : 0.30mm (0.012”) - 0.36mm (0.014”) **Tip load : 4.5gf**

Long hydrophilic coating that enhance the smooth controllability in micro catheter.

ASAHI Gaia specification / structure / performance

Tip Structure ~1mm Pre-shape

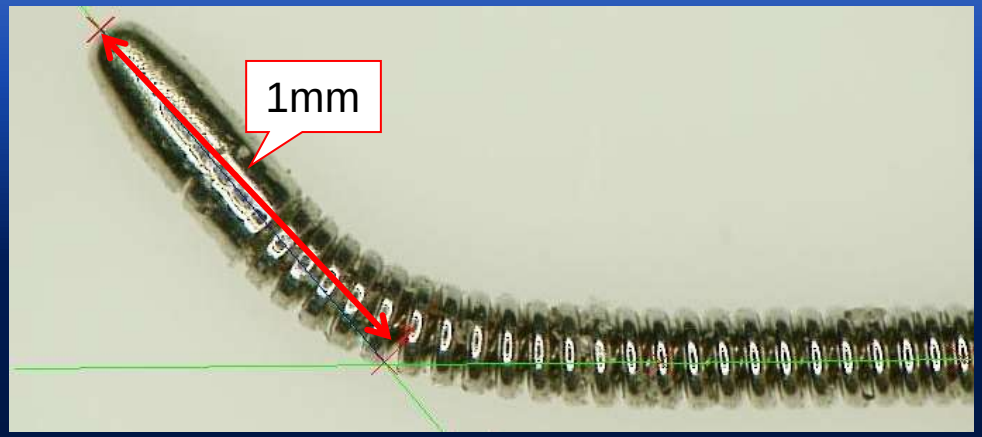
Pre-shape

EASE-OF-USE MADE A REALITY

The most distal 1mm (approx.) shaped during production, saving the operator the difficulty of manual shaping.

Possible to increase the angle to create a more acute curve manually
Possible to change re-shape the tip depending on procedural conditions

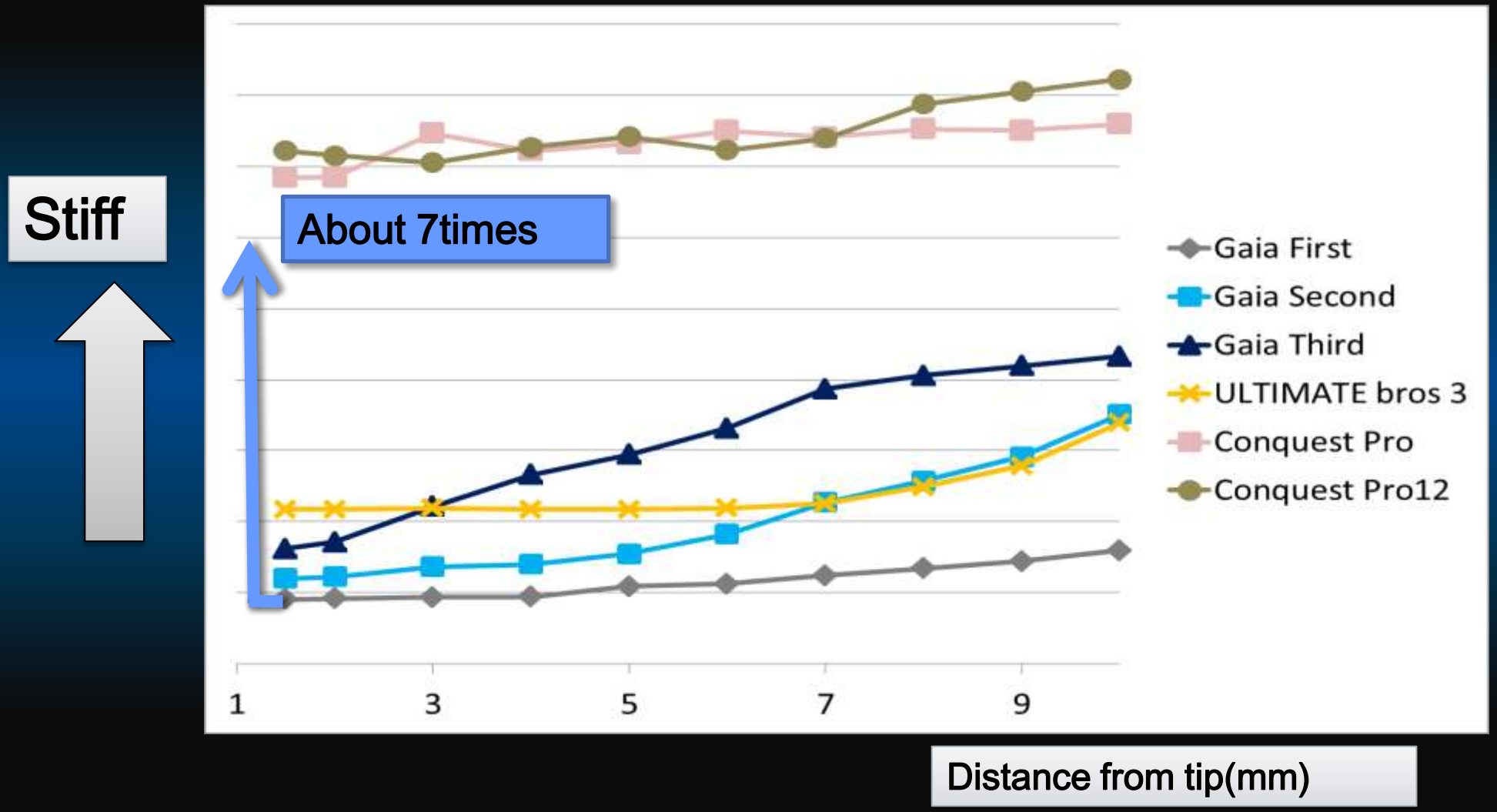
Pre shape
1mm – approx.45°



Retains shape memory during procedure

ASAHI Gaia vs. Conquest Pro

Difference of penetration by the thickness of the core wire



The above data was obtained by company standardized test, which may differ from industry standardized tests.
The above data does not prove that all devices have exactly the same performance with the samples used for these tests.

Gaia specification/structure/performance

Tip Structure ~ Composite core : double coil structure

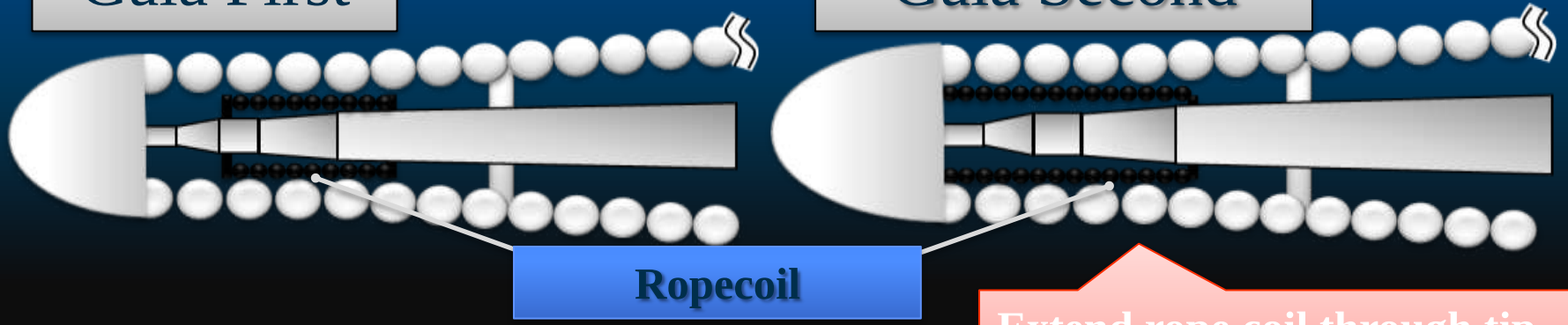
Composite core

- Double coil structure
  Transfer torque force to the distal with keeping flexible tip

- Round core design to the distal end eliminates the “Whip Motion” phenomenon

Gaia First

Gaia Second



Ropecoil

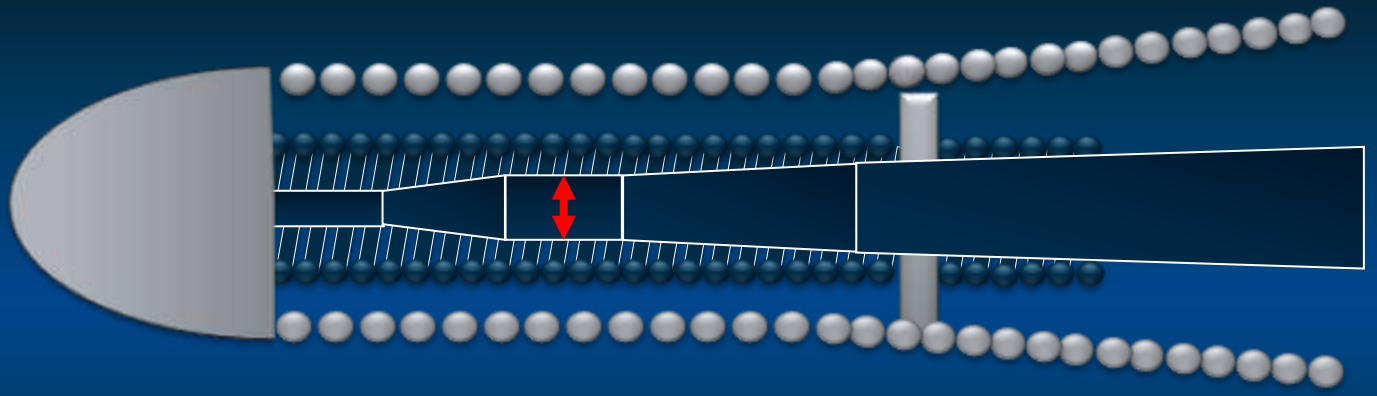
Extend rope coil through tip

- **Enhance joint strength**
- **improve torque force**

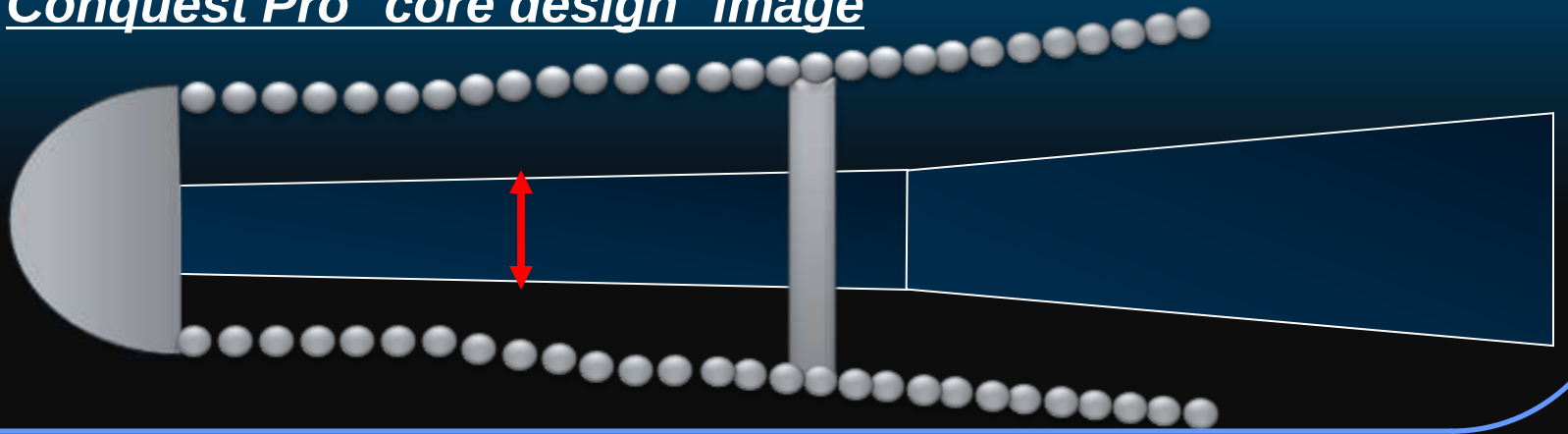
ASAHI Gaia vs. Conquest Pro

Difference of penetration by the thickness of the core wire

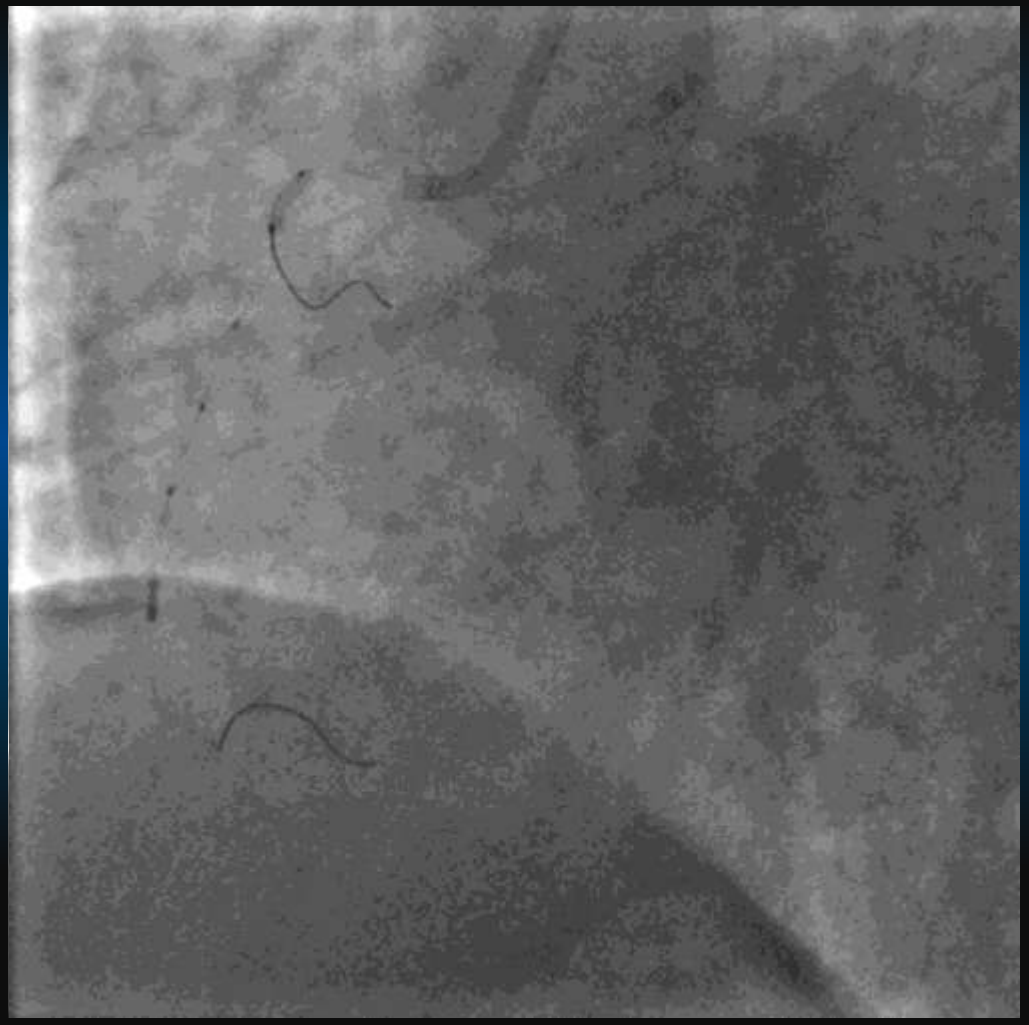
ASAHI Gaia core design image



Conquest Pro core design image

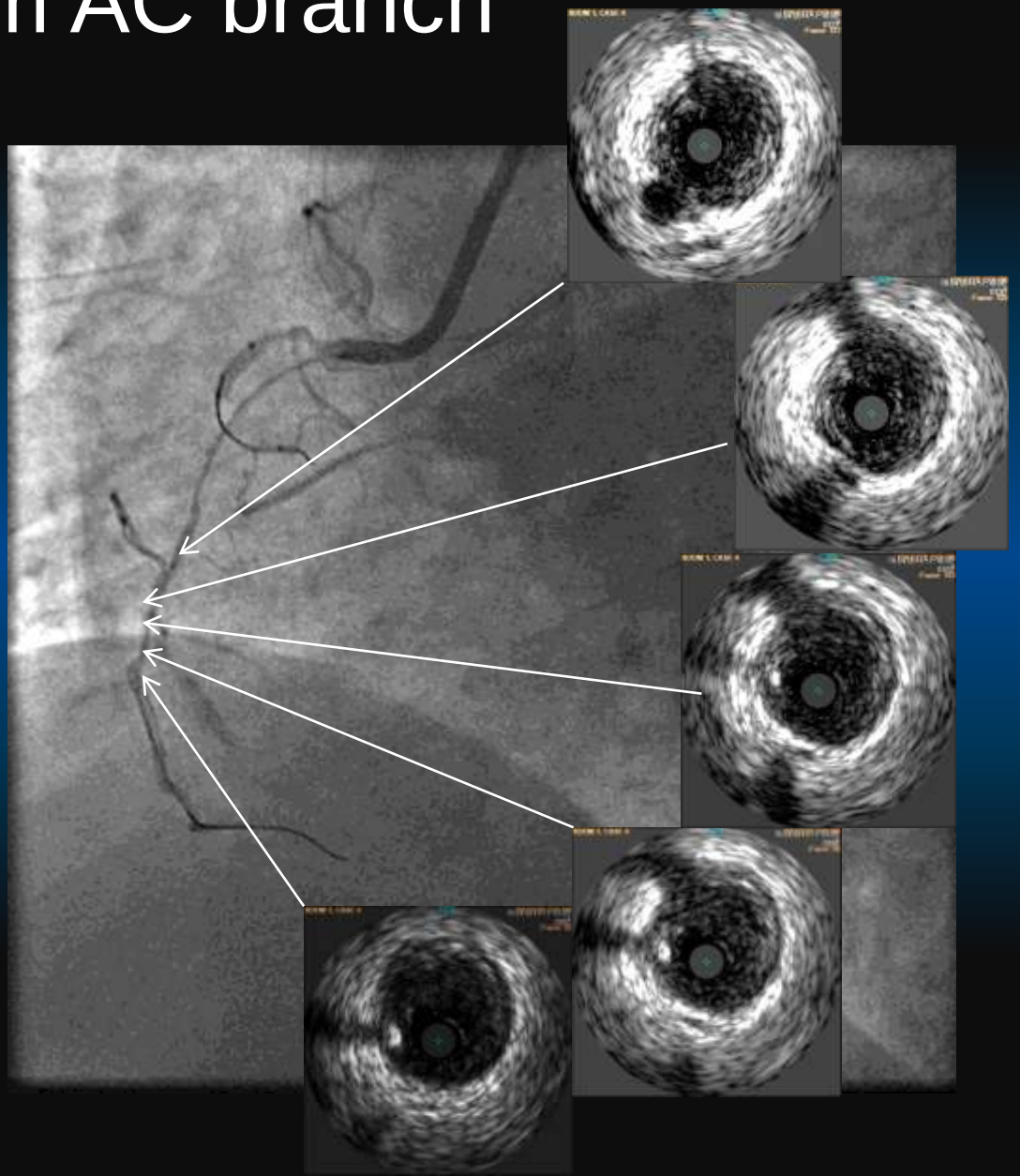


RCA Os CTO with good collaterals

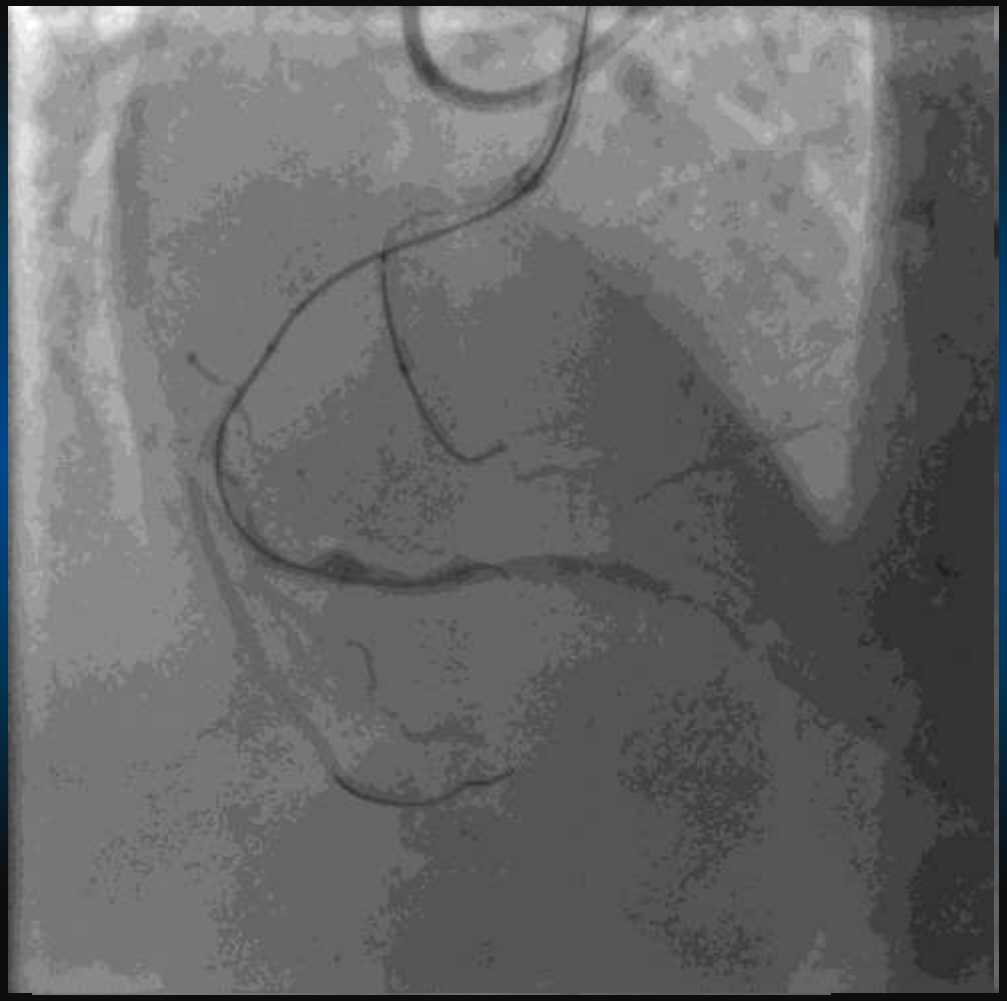


Step down 20 Guide with “Anchoring Balloon”

IVUS from AC branch



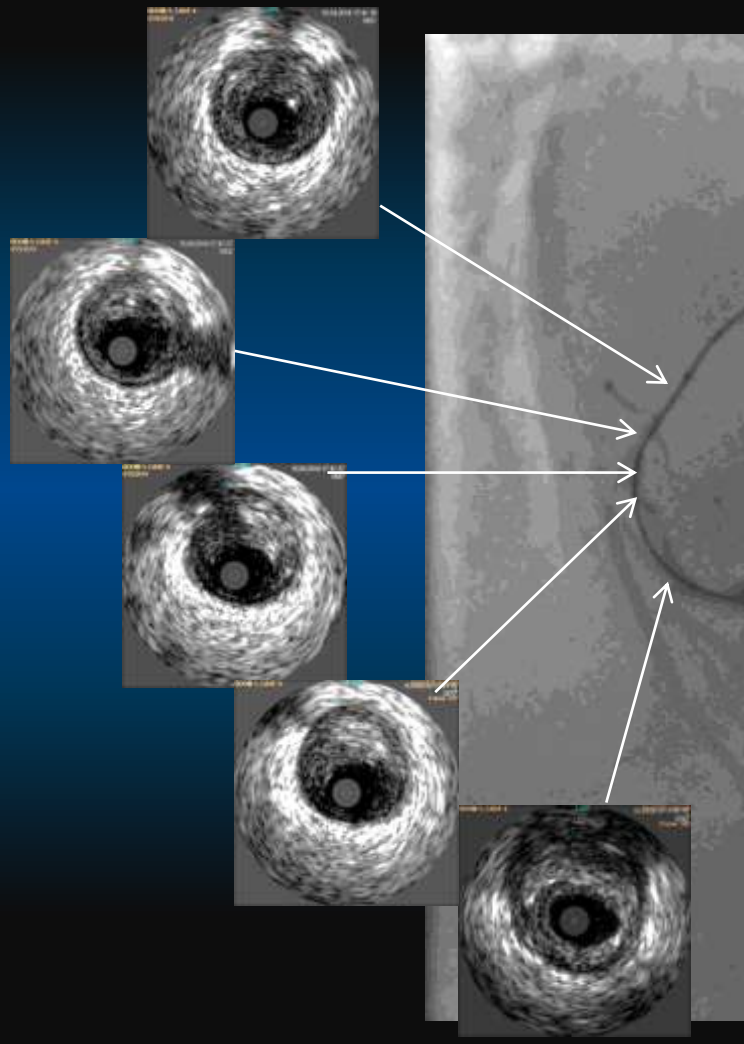
RCA Os CTO with good collaterals

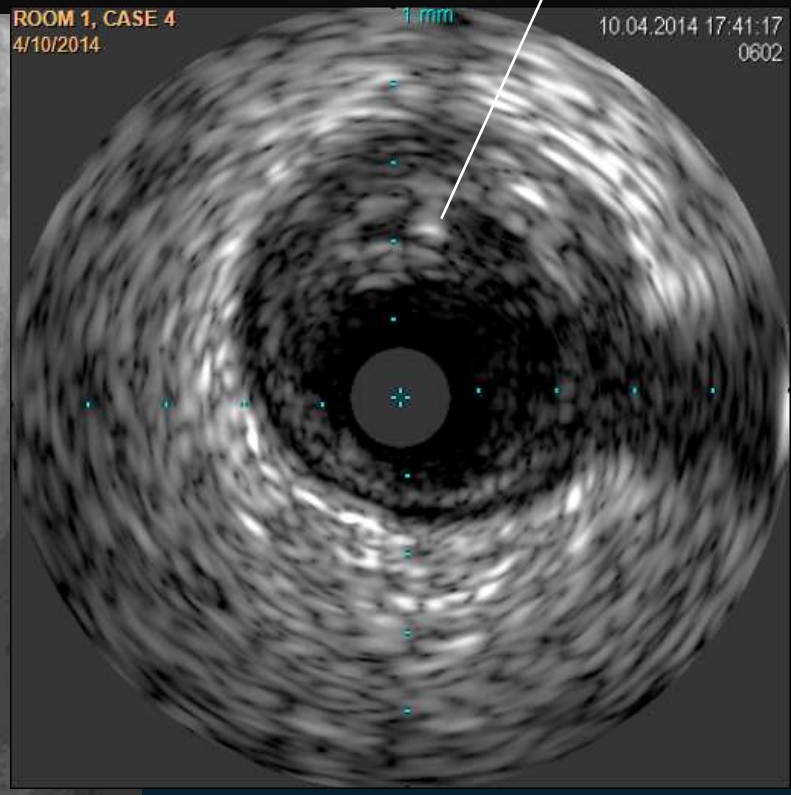


XT-R wire over the 2 nd OTW lumen of Crusade

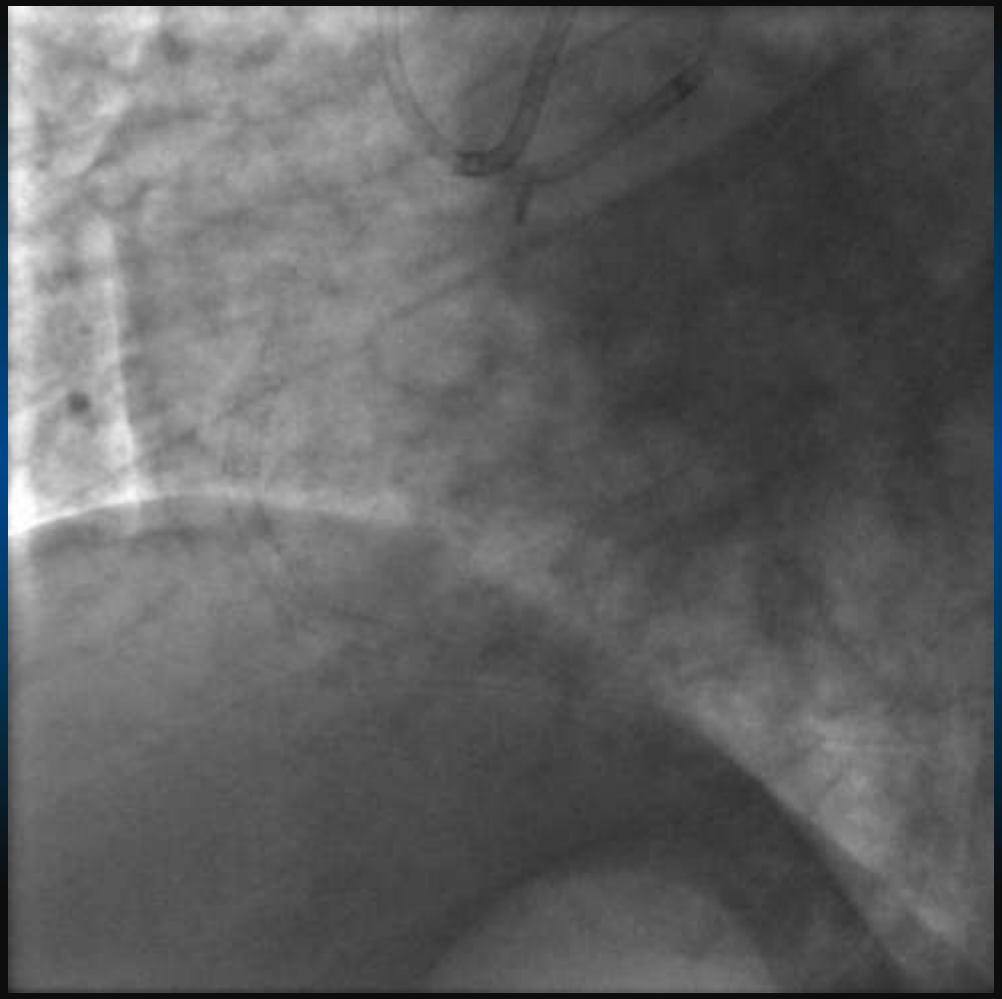
IVUS from RCA (main vessel)

Side branch Wire in the intraplaque



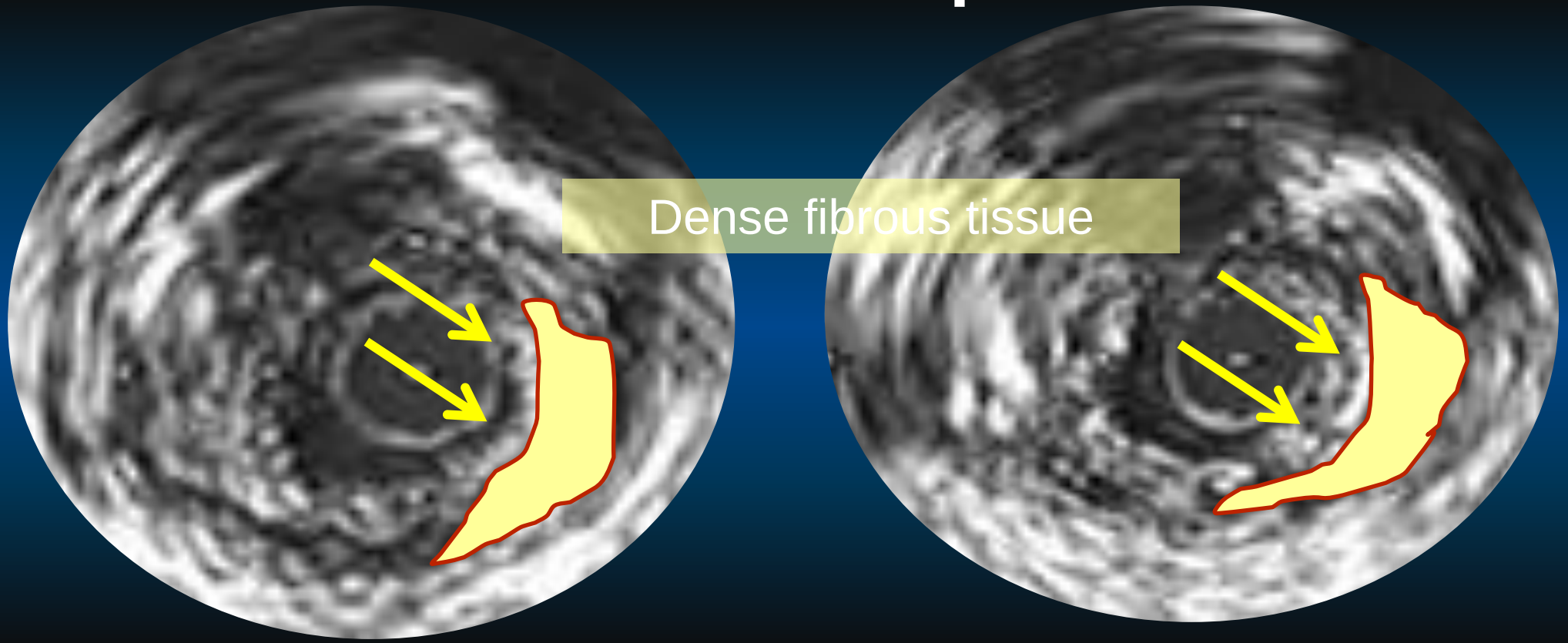


RCA Os CTO with good collaterals



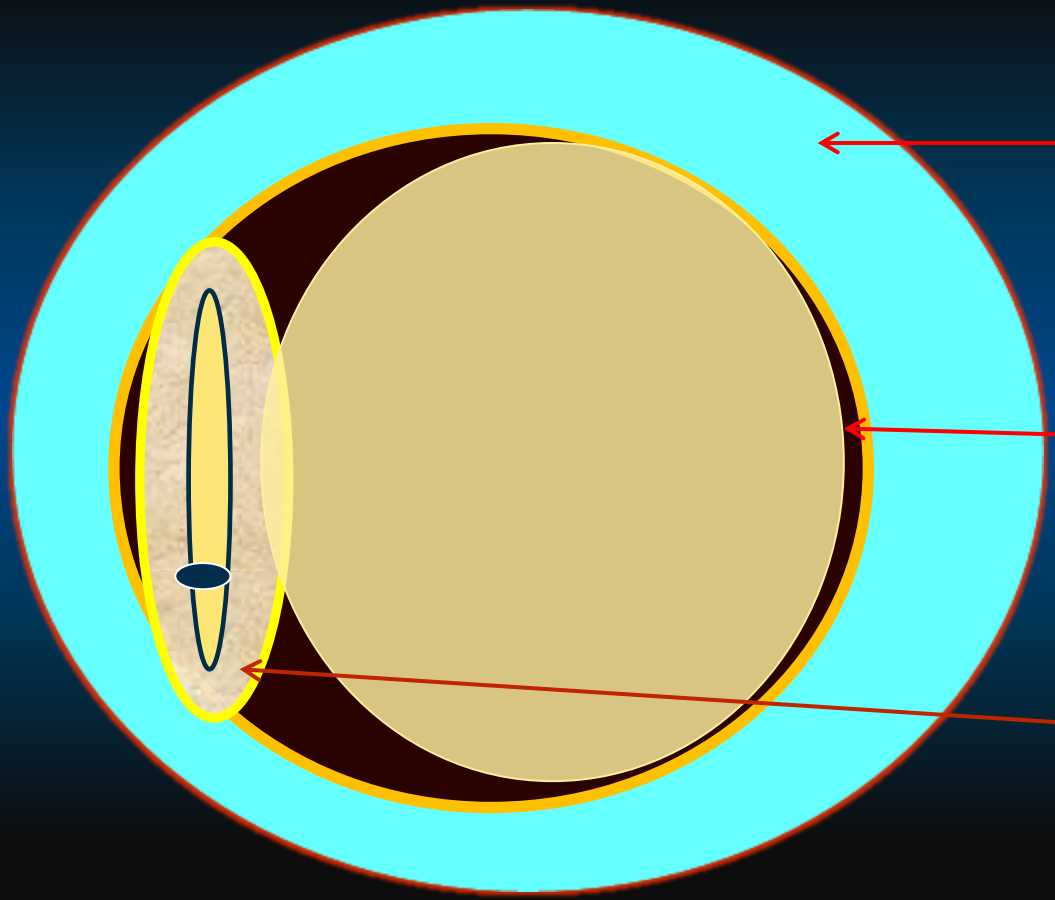
Andres Iniguez, KBT

Typical Response of Hard Tissue to Stiff Wire Manipulation



Subintimal dissection by Stiff CTO wire manipulation

Dissection/hematoma grows in size

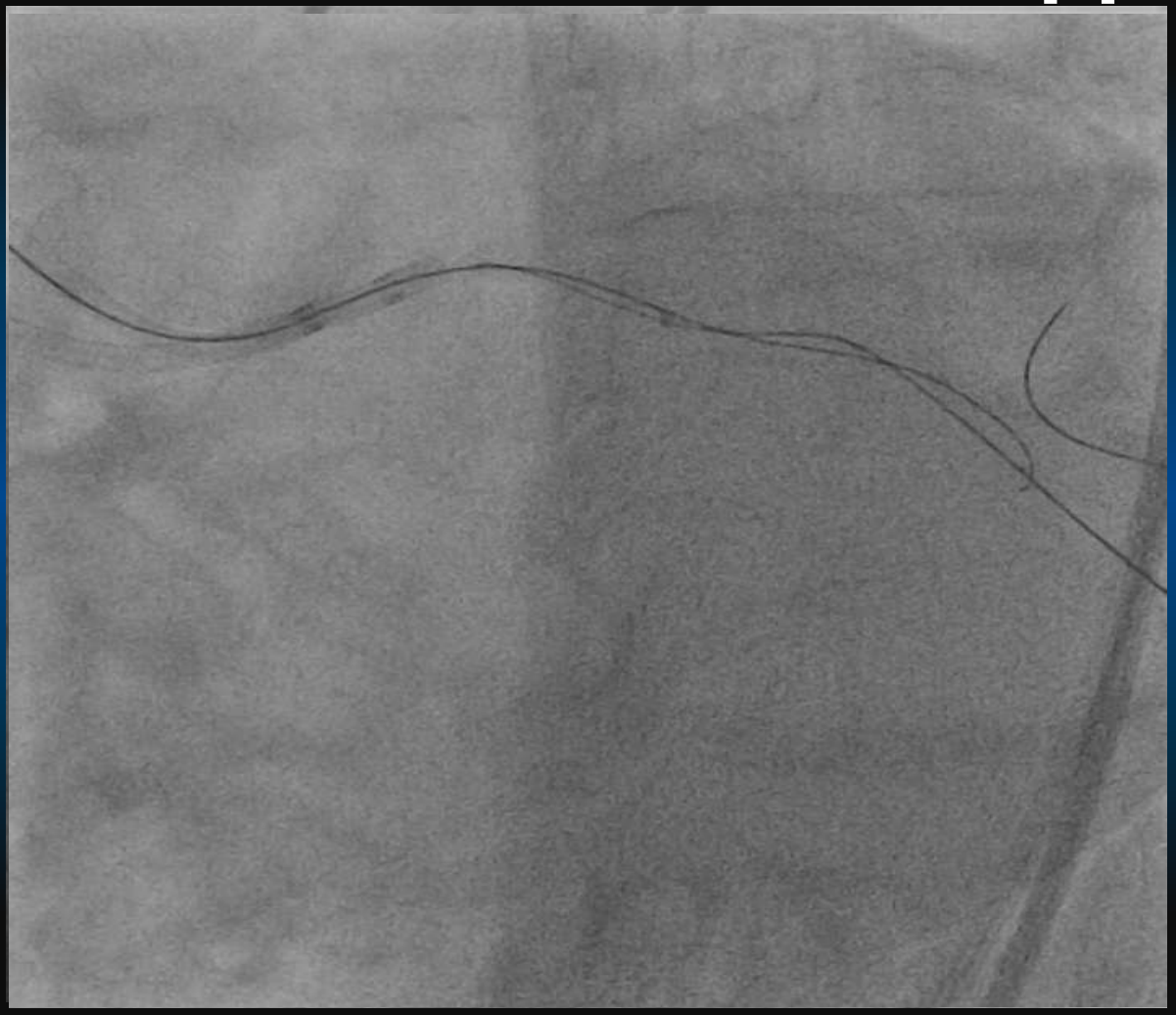


Adventitia

Media = Sub-intima
= Intra-mural hematoma

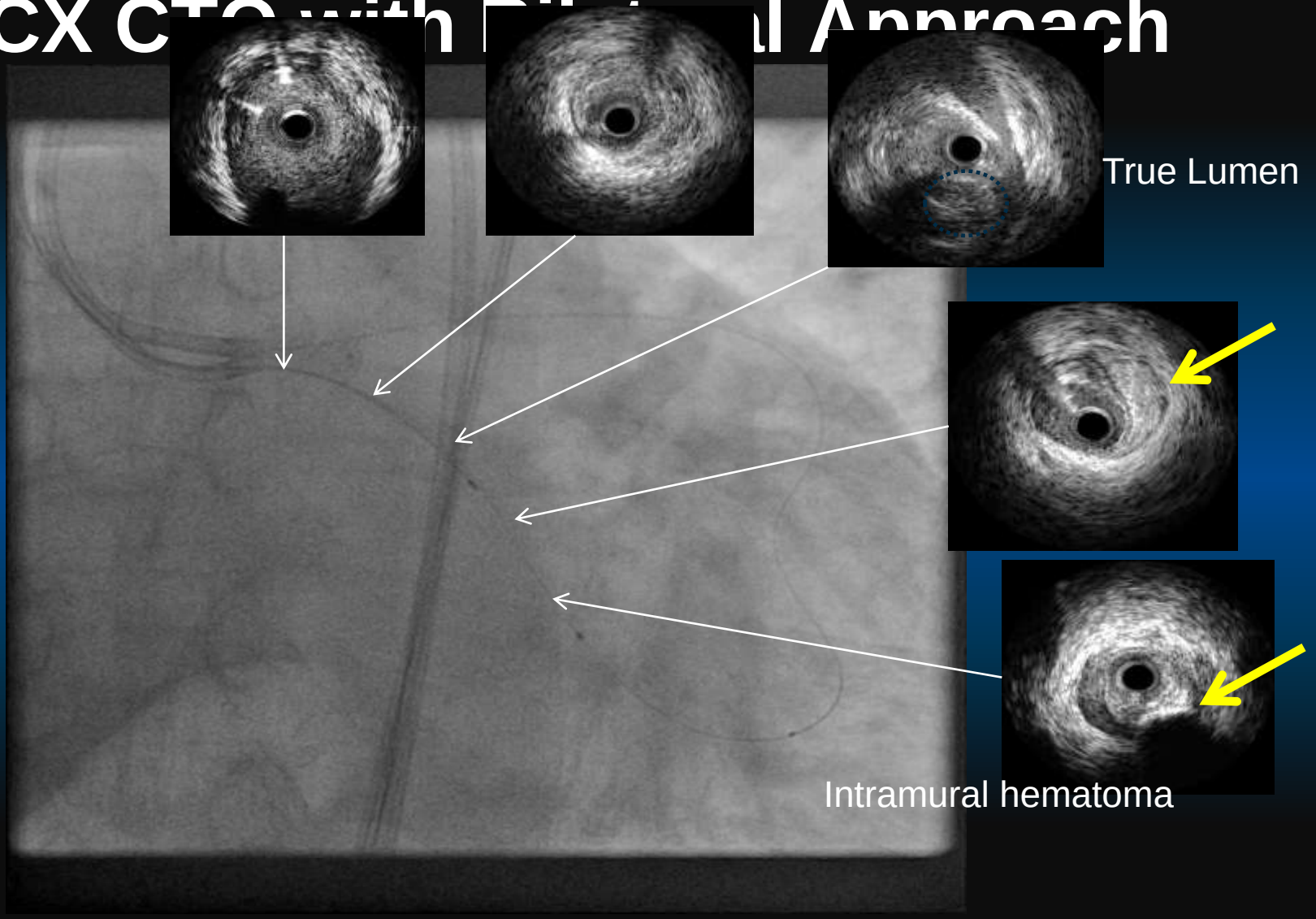
Intimal Plaque

LCX CTO with Bilateral Approach

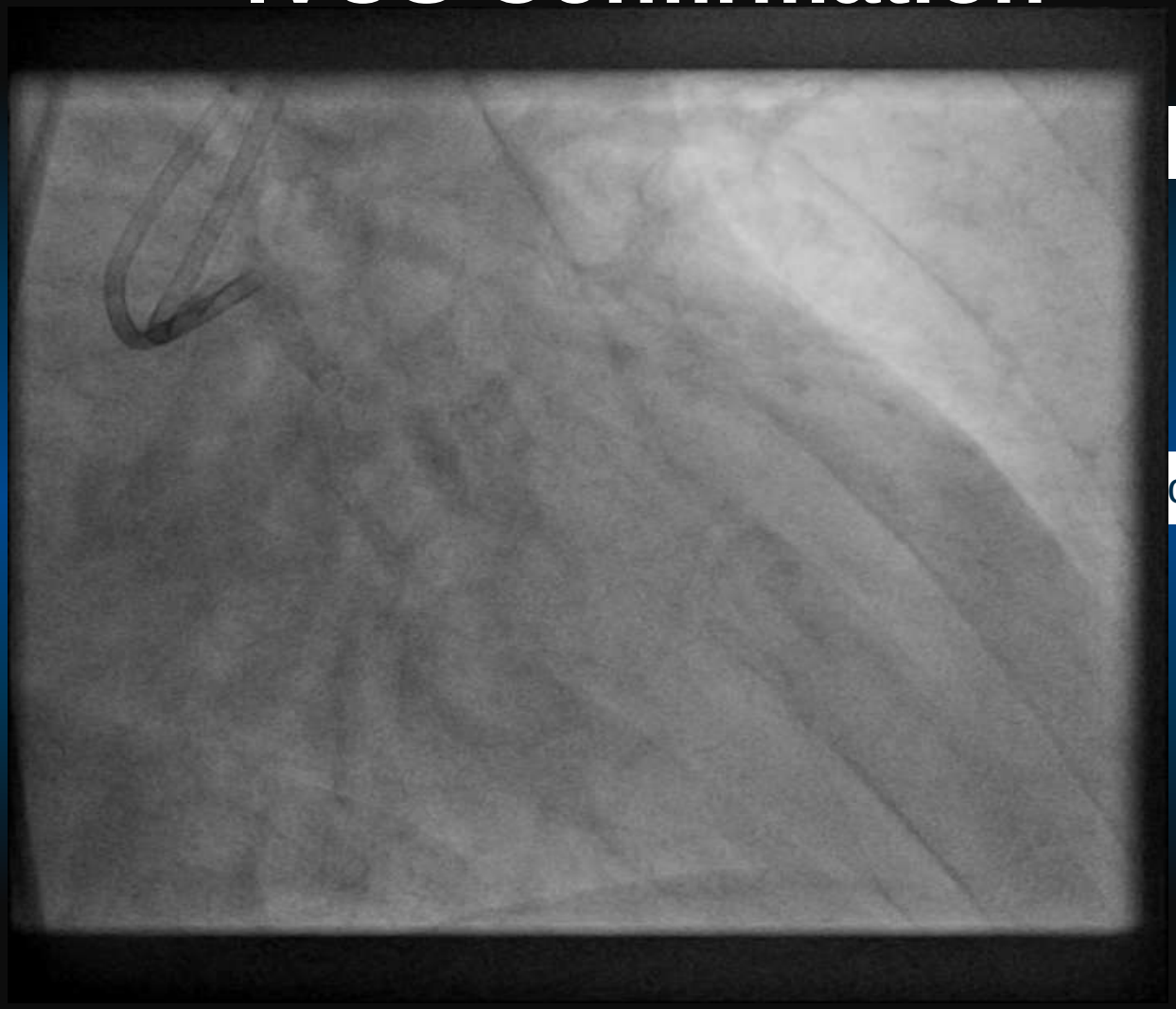


Guidewire entry

LCX CTO with Bilateral Approach



IVUS Confirmation



2.75 mm x 28 mm DES

2.25 x 28 mm DES

one

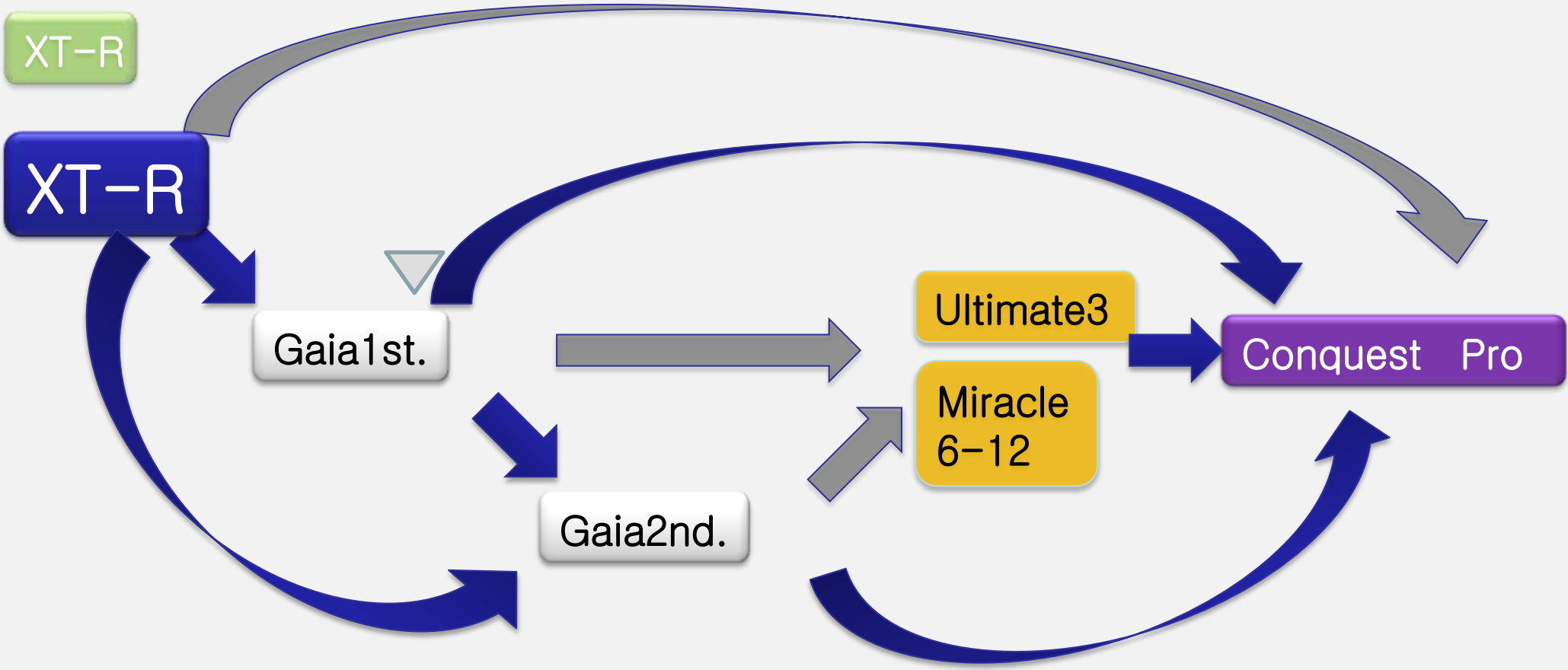
How to manipulate Gaia ?

The keys to manipulate a Gaia wire:

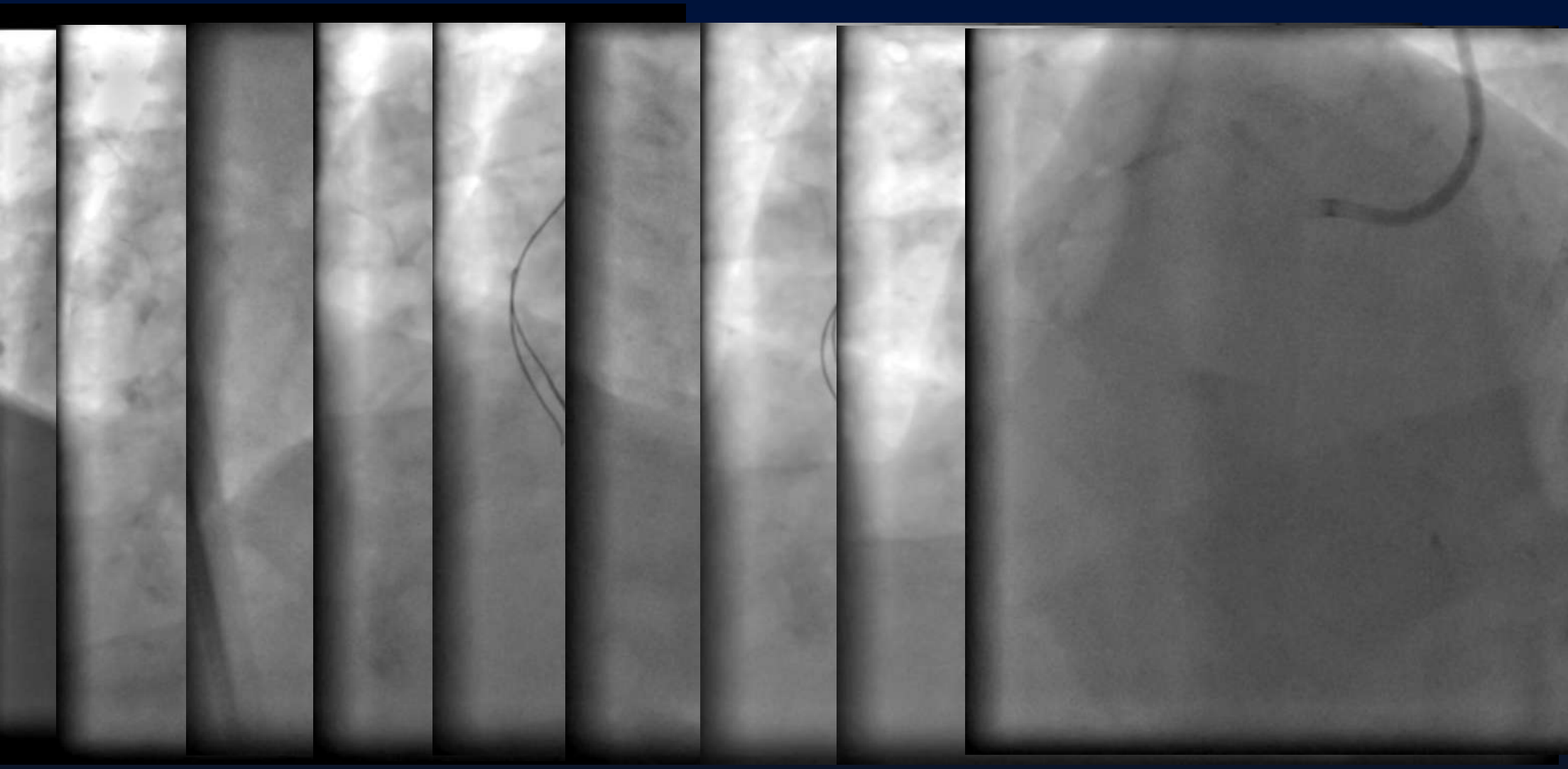
Pinpoint to direction to go

Rotate to change direction when you pull back (deflection control)

How to use XT-R and Gaia series ?



Modern Reverse-CART

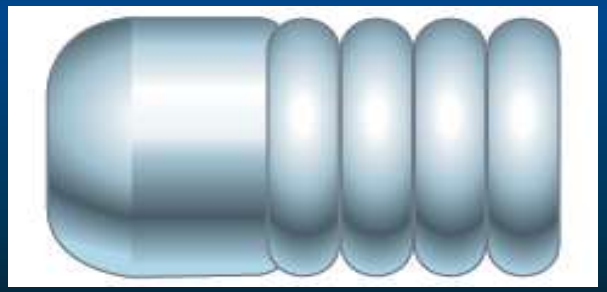


XT-R,failed Gaia 1 &2 failed Miracle Neo 3g Retrograde Gaia 2

3 TIPS FOR TACTILE FEEDBACK

Ball-tip features, non-tapered design

ASAHI
Miracle Neo 3
PTCA GUIDE WIRE

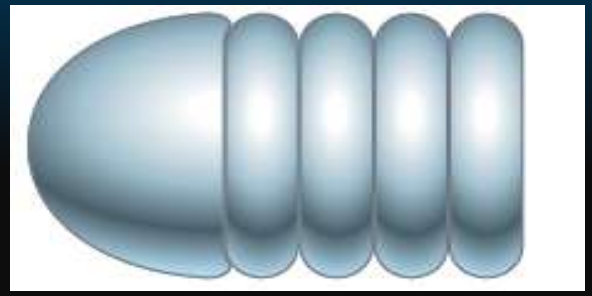


0.36mm
0.014”

Gaia Second

0.28mm
0.011”

Miracle3 / UB3



0.36mm
0.014”

ASAHI CTO Guide Wire

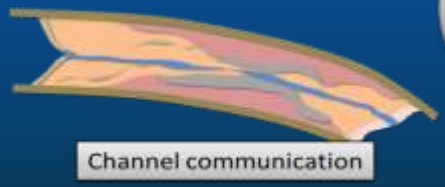
Miracle Neo 3

Proper usage:

- Occluded lesion with no hint of vessel anatomy

Positioning

- 2nd.choice for chronic occlusion
- Use with XT-A/R or Gaia



XT-A
XT-R

Gaia

No hint of vessel anatomy

Miracle Neo

New Paradigm in CTO-PCI in 2014

- ✓ **The key of CTO wiring is precise and intentional control with deflection principle with safer profile.**
- ✓ **New wire control (needs modification) on conventional strategies**
- ✓ **Gaia wires awaited for widely reproducible outcomes, after initial learning of 10-20 cases**
- ✓ **Active wire control could facilitate both Antegrade and Retrograde approaches with further additional success in perspective**

CTO Club 2014 , 20-21,June, Nagoya, Japan