



New wire for CTO

Concept and Usage

A new guide wire for retrograde channel crossing

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Introduction

Algorithms for efficient CTO PCI has been developed from several working groups.

Innovation of guide wire and micro catheter can change the procedure and lead its primary success rate to be a very high level.

Retrograde summit registry data 2012-2014



Case enrollment : 4,472 CTO-PCIs



122 cases were excluded due to insufficient case card information

Final subject for analysis:
4,350 CTO-PCIs

	Total	2012	2013	2014
CTO-PCIs	4,350	1,553	1,676	1,121
- Ante group	3,021	1,063	1,138	820
- Retro group	1,329 (31%)	490 (32%)	538 (32%)	301 (27%)

Retrograde procedure outcome



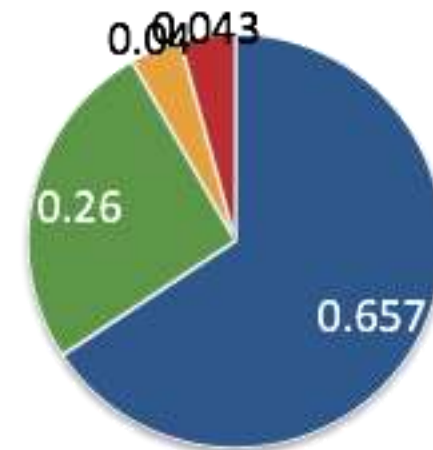
Retrograde procedure success

Retro group	Total (1329)	2012 (490)	2013 (538)	2014 (301)	P
<i>Retro overall</i>	69% (917)	69% (344)	66% (363)	68% (210)	0.0218

Reason of retrograde procedure failure (412)

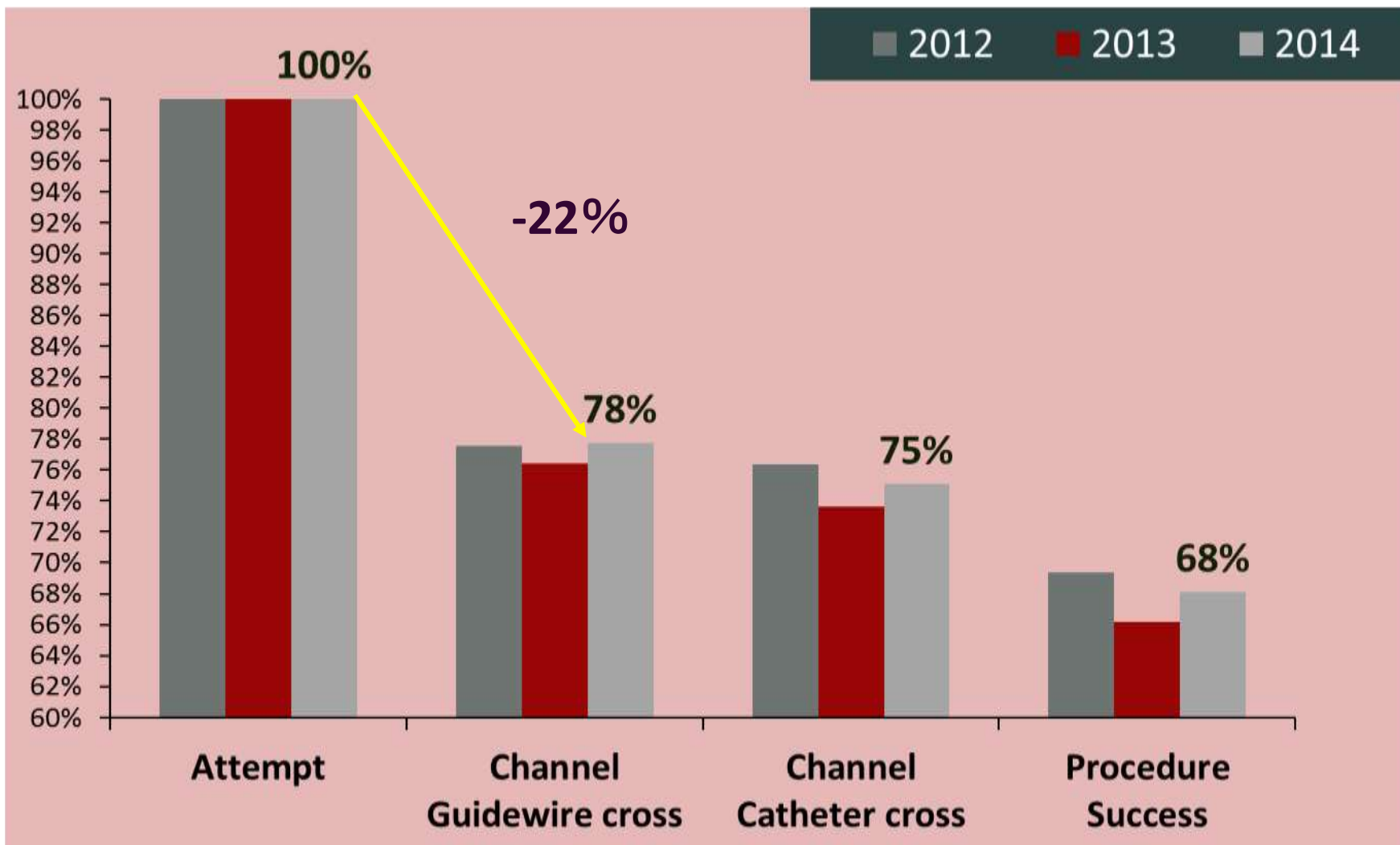


- Couldn't cross collateral channel
- Couldn't cross CTO by GW
- Couldn't cross CTO by any catheter
- Procedure discontinuation due to complication



Switched to antegrade approach ; 76% (313)

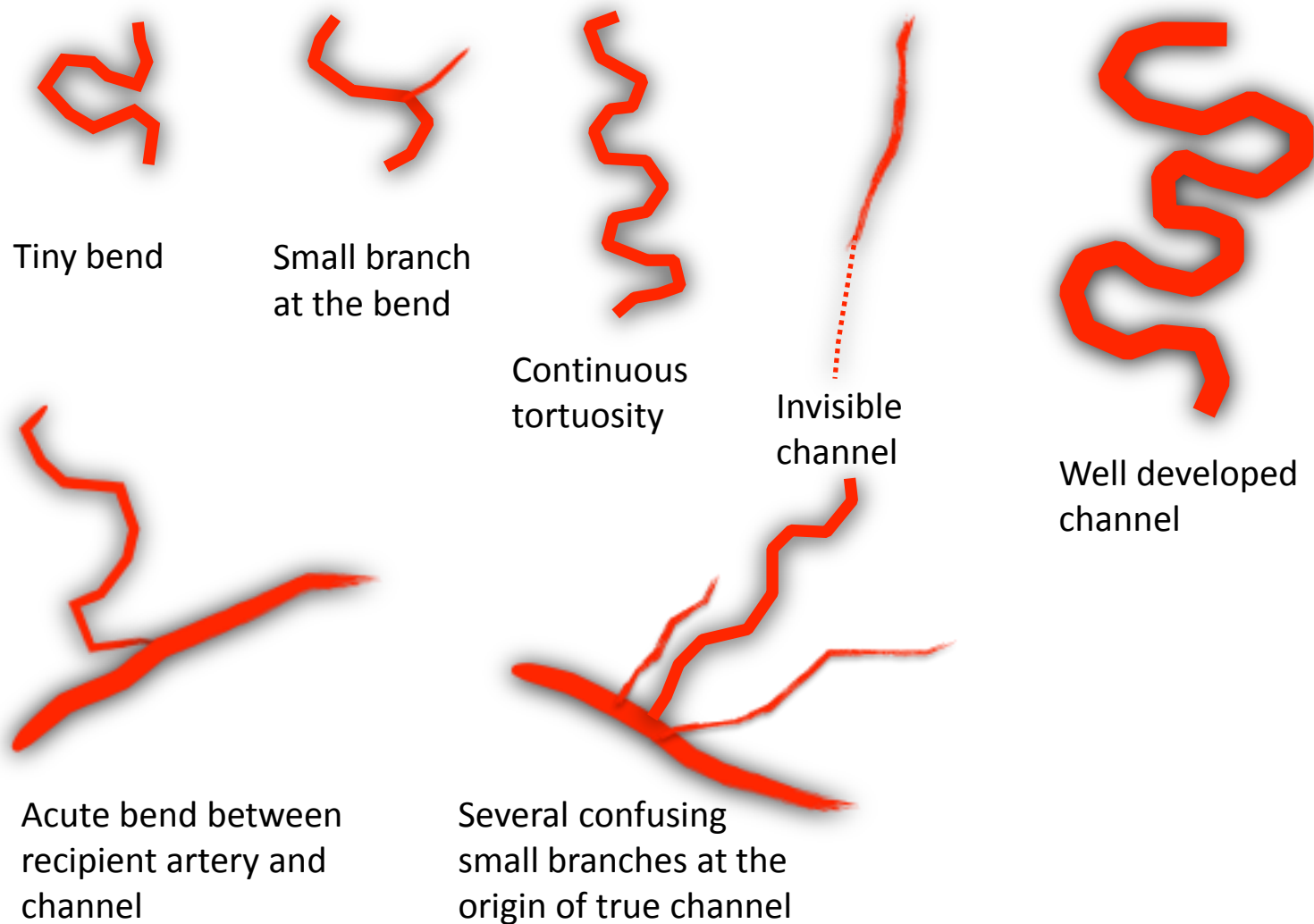
Retrograde procedure outcome



Collateral channel crossing is the first step of retrograde procedure and the main reason whether the procedure will succeed or not.

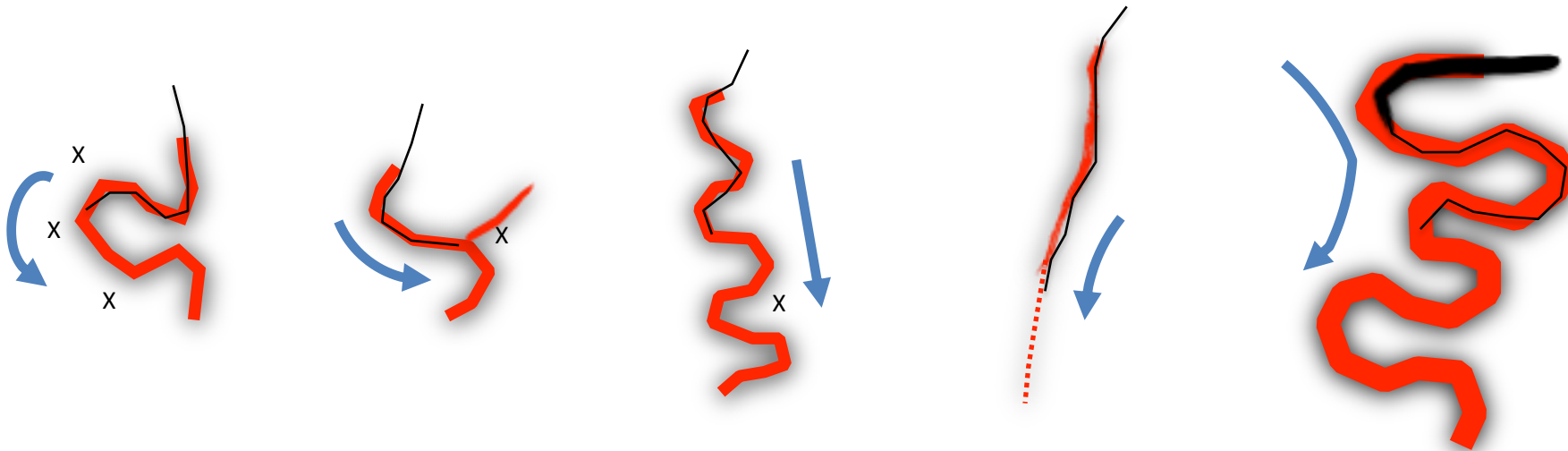
Why is the collateral channel crossing difficult?

Several factors that affect collateral crossing





What is the ideal wire?



- ☐ Tip flexibility
- ☐ Tip lubricity
- ☐ Push transmission

- ☐ Tip flexibility
- ☐ Torque ability
- ☐ appropriate tip curve

- ☐ Tip flexibility
- ☐ Tip lubricity
- ☐ Tiny tip curve

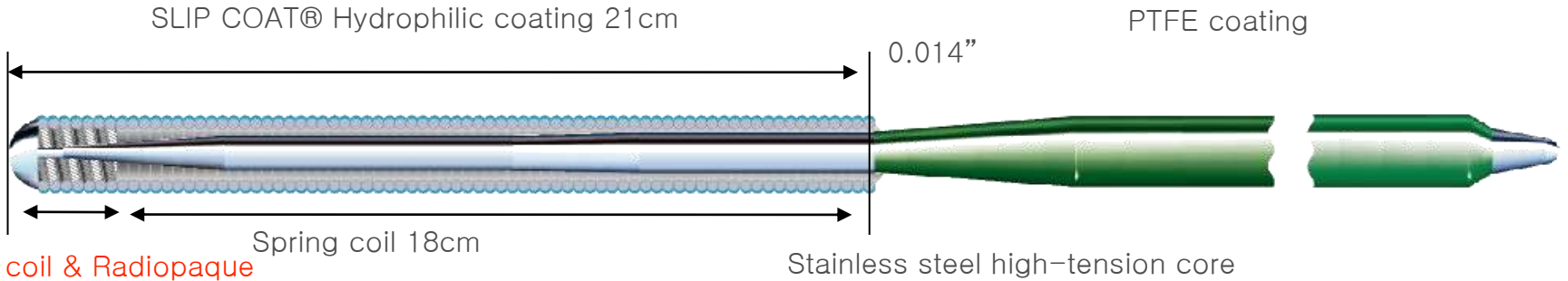
- ☐ Lower tip profile
- ☐ Tip lubricity

- ☐ Torque ability
- ☐ Lubricity
- ☐ Micro catheter assistance

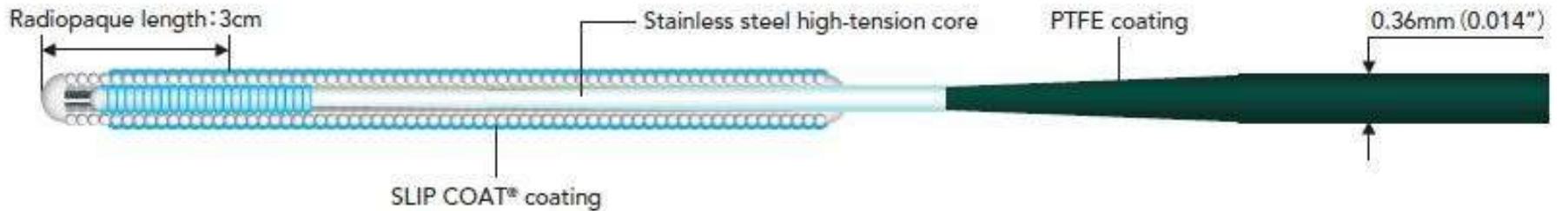
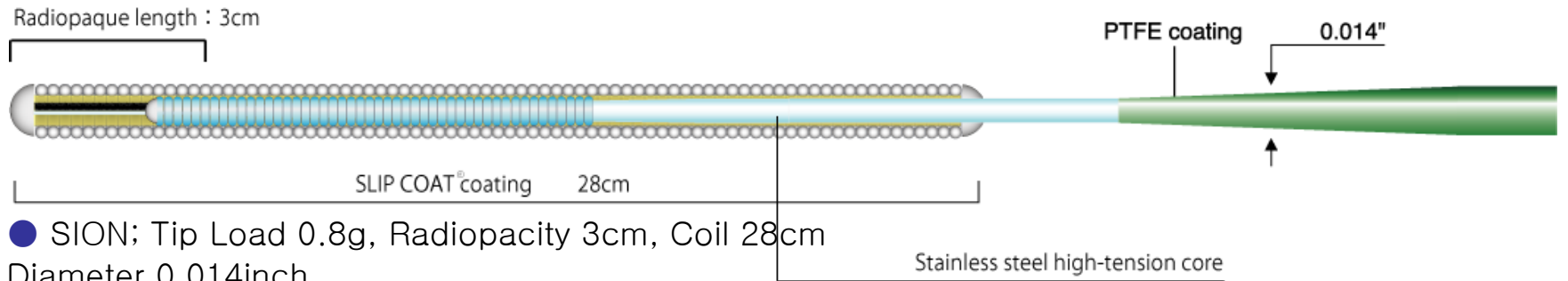


Stretching the collateral by the wire and micro catheter is important

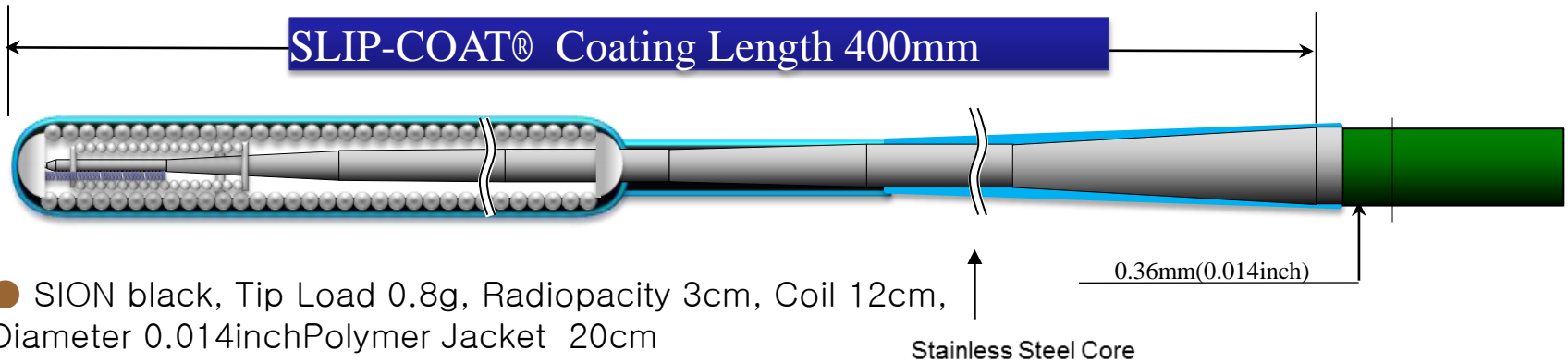
Guide wires for collateral crossing



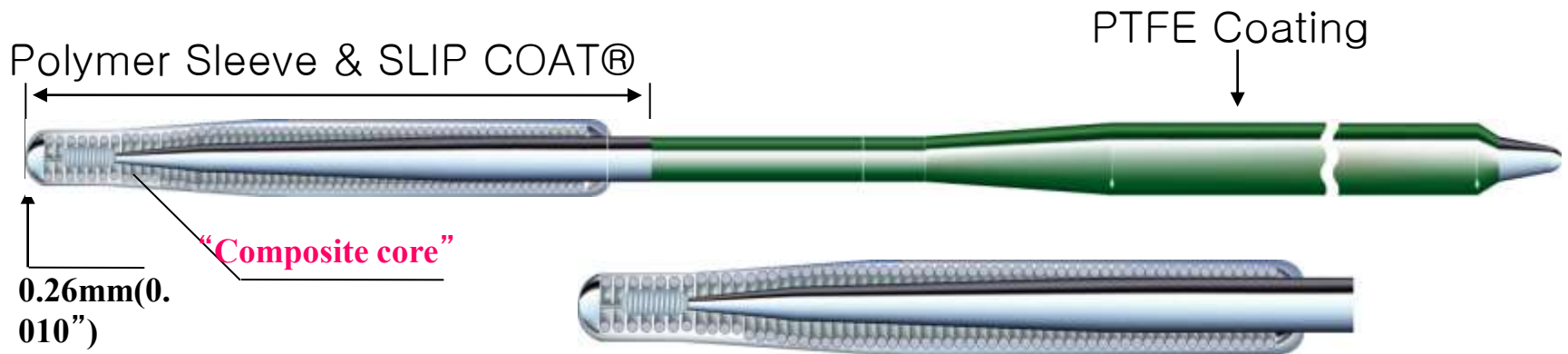
● SUOH; Tip Load 0.5g, Coil 21cm, Diameter 0.014inch



Guide wires for collateral crossing



- SION black, Tip Load 0.8g, Radiopacity 3cm, Coil 12cm, Diameter 0.014inch Polymer Jacket 20cm Slip Coat 40cm



- Fielder XTR, Tip Load 0.6g, Radiopacity 16cm, Coil 16cm, Diameter 0.014inch, Tip diameter 0.010 inch Polymer Jacket



Retrograde relevant complications

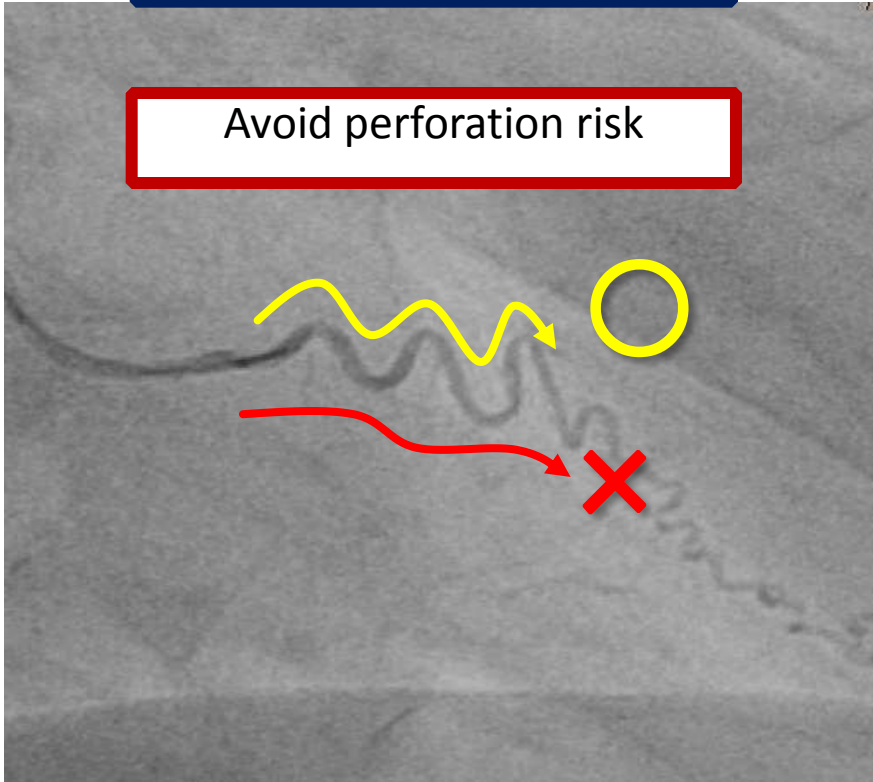
	2012 (490)	2013 (538)	2014 (281)	P
Retrograde approach relevant	11.4% (56)	8.9% (48)	7.8% (22)	<i>0.2040</i>
Channel injury	10.6% (52)	8.4% (45)	7.5% (21)	0.2703
Additional treatment required	4.1% (20)	3.0% (16)	2.5% (7)	0.4274
Cardiac tamponade	0.4% (2)	0.2% (1)	1.4% (4)	0.0623
Donor artery trouble	0.2% (1)	0.2% (1)	0.4% (1)	0.8803

Including minor events

Guide wire suitable for collateral crossing

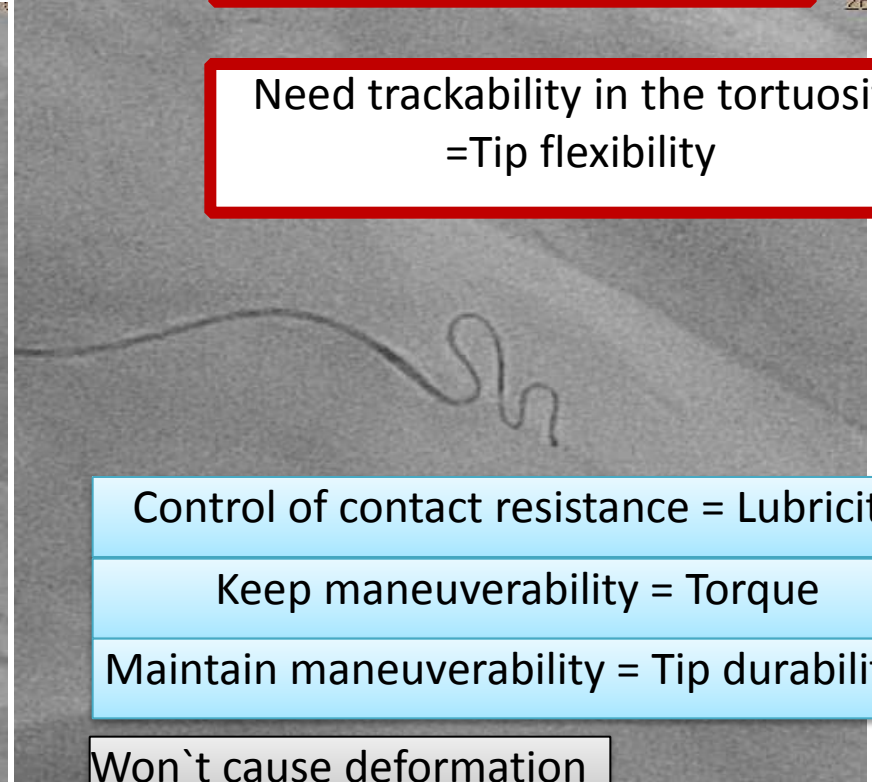
Not to damage the channel

Avoid perforation risk



To cross the channel

Need trackability in the tortuosity
=Tip flexibility



Control of contact resistance = Lubricity

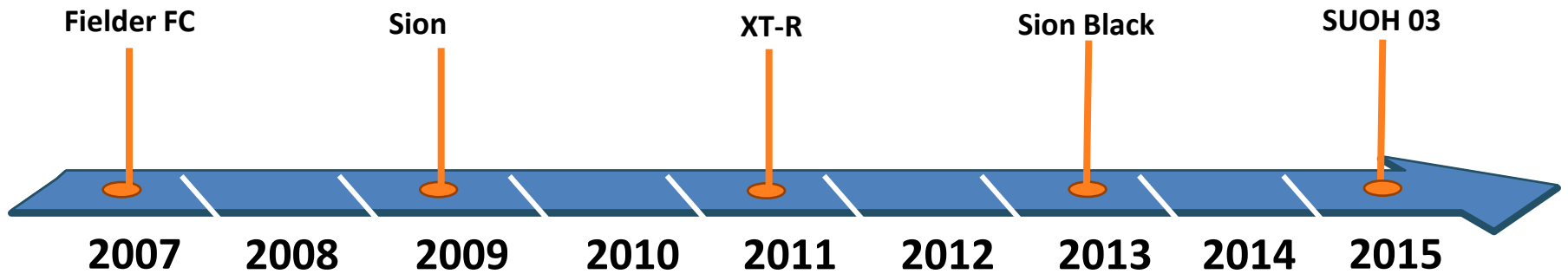
Keep maneuverability = Torque

Maintain maneuverability = Tip durability

Won't cause deformation

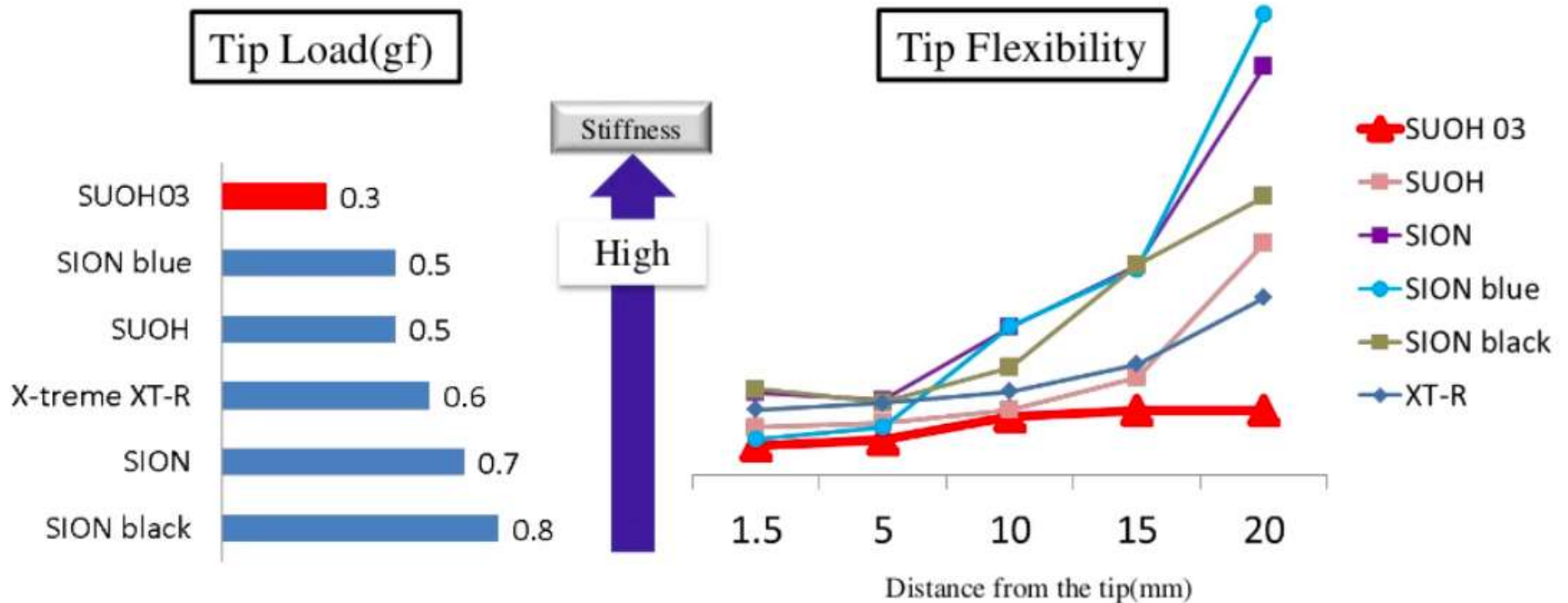
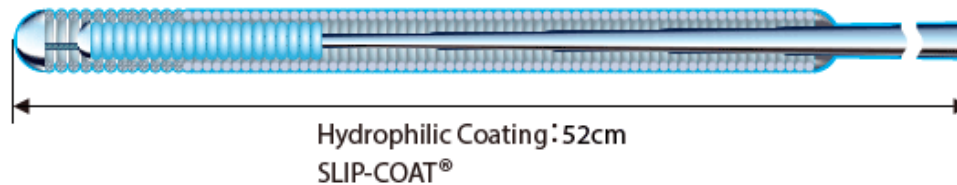
Technological progress of the guide wire

- 1) Fielder FC
- 2) Sion/Sion blue
- 3) XT-R/Sion black
- 4) SUOH 03



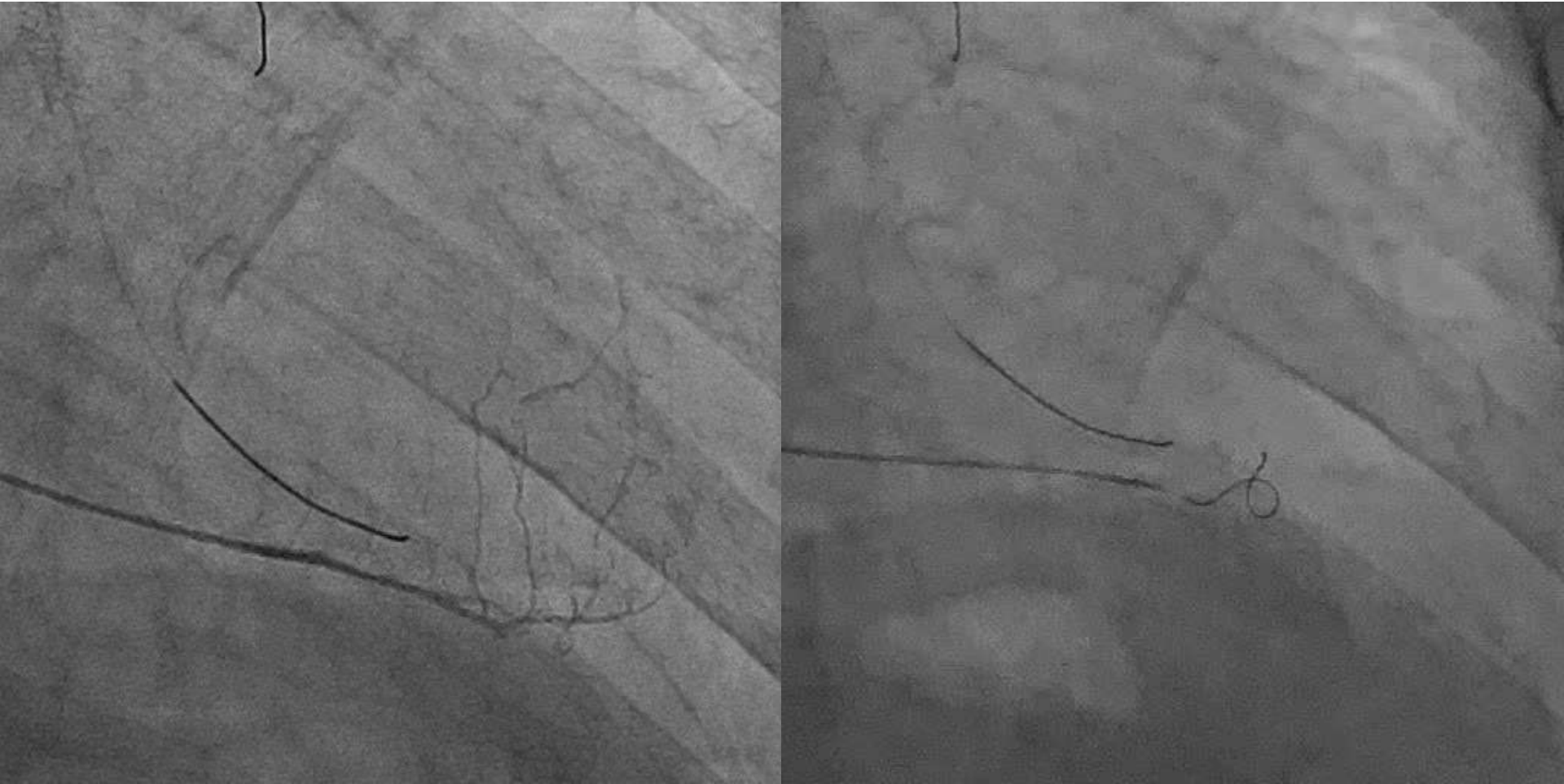
SUOH 03

- SUOH03 is a **very flexible** wire, flexibility maintained from tip to its proximal part.
- It facilitates to cross the small bended vessel by using its increased flexibility and track-ability.



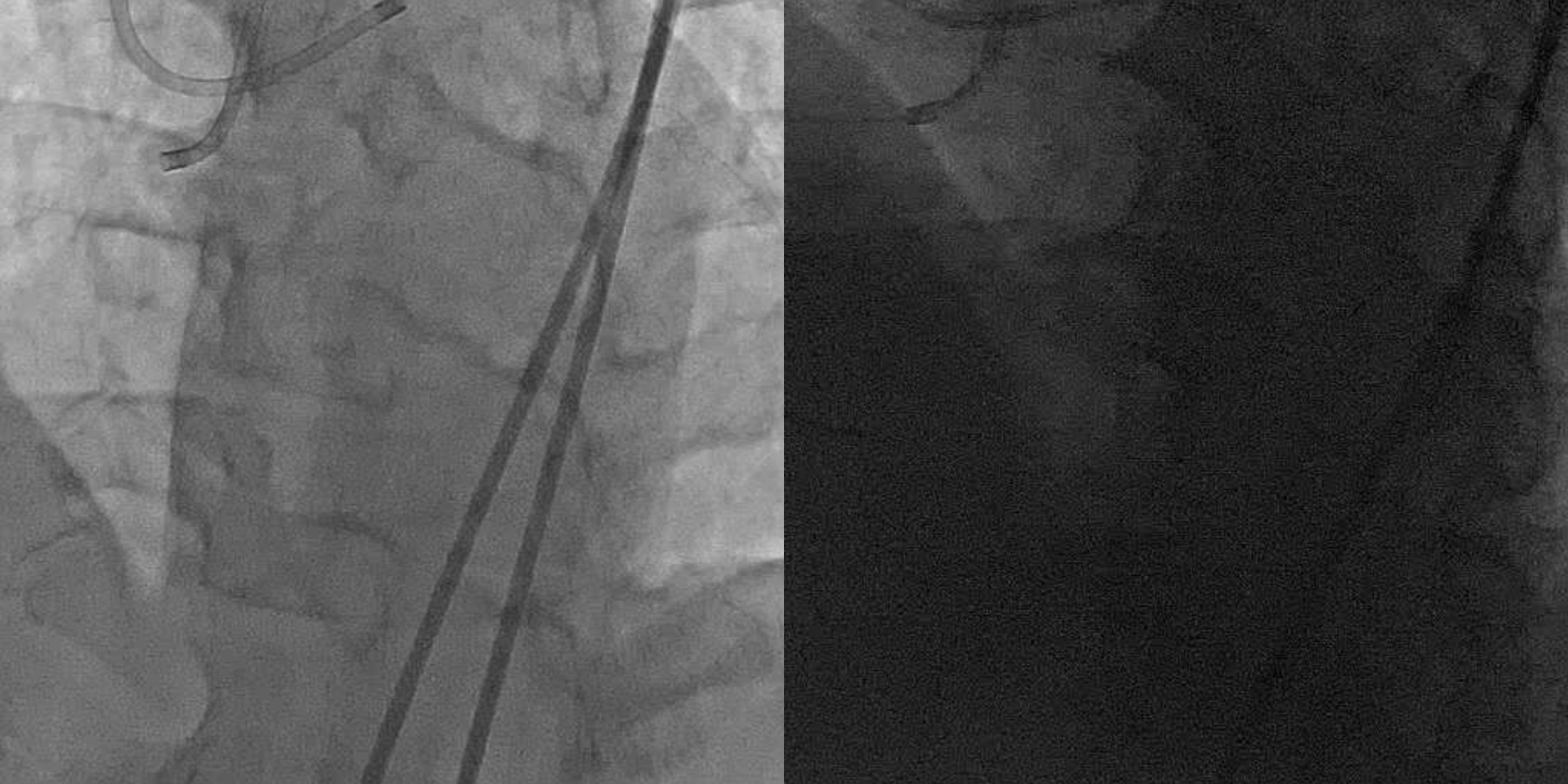


Tiny epicardial channel

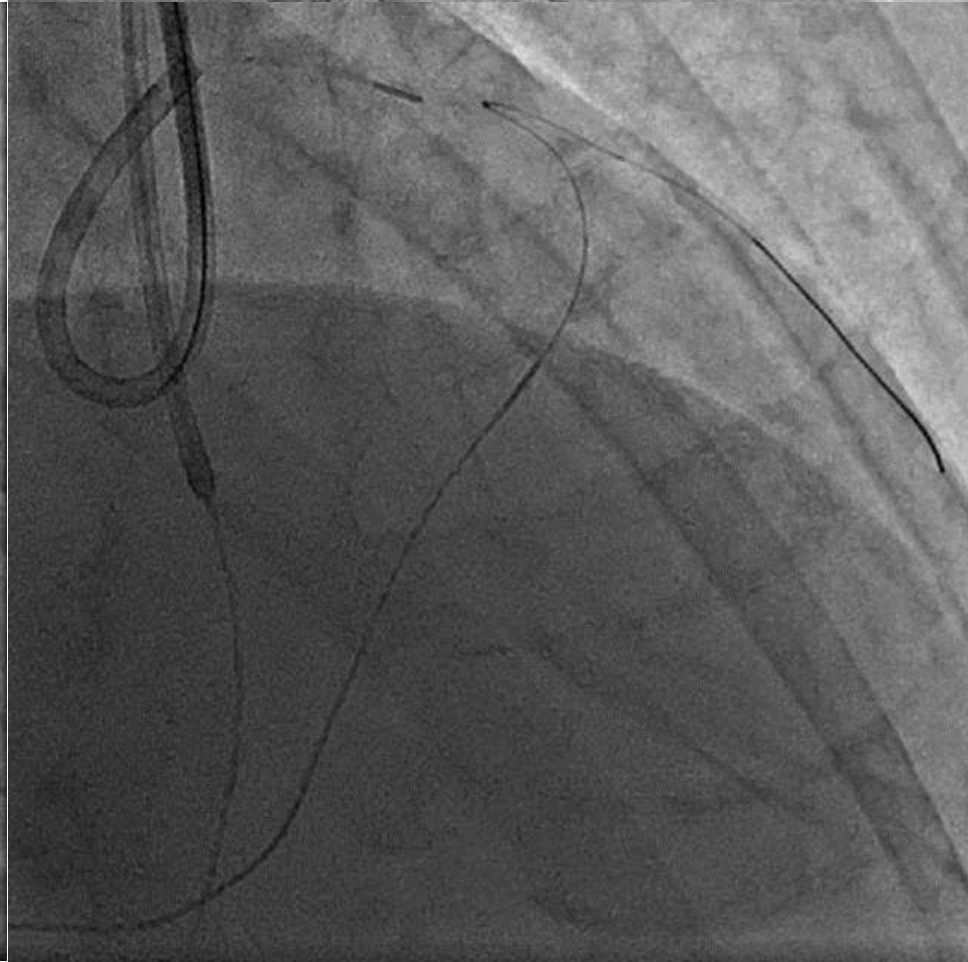
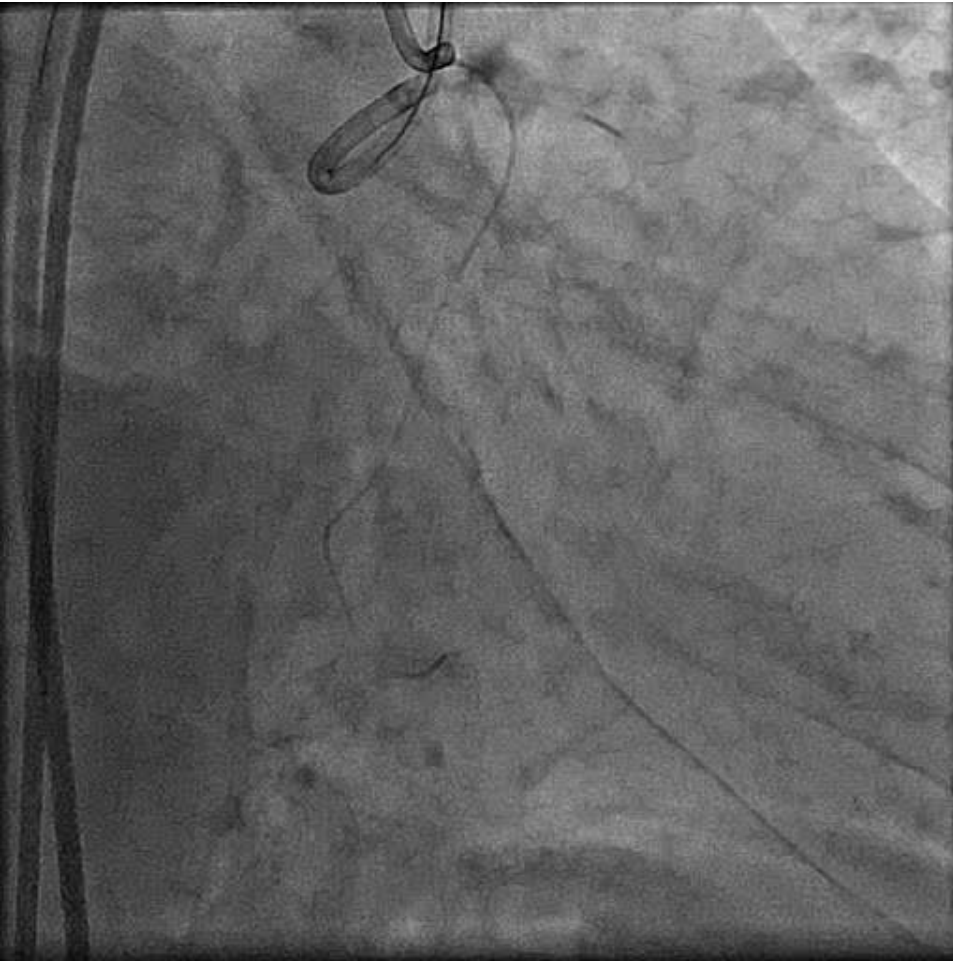




Tortuous epicardial channel



Tiny septal channel with a bent



Retrograde channel crossing

Guide wire selection for complex channel

Crossing septal channel, a guide wire with good maneuverability is needed. The frontline wire is **SION**. However, usage of **SUOH03** is increasing because of its improved maneuverability and flexibility.

Crossing epicardial channel, guide wire with tip flexibility is need to avoid vessel injury. Therefore, the frontline wire is now **SUOH03**.

Anatomy	Recommendable GW	
	Septal	Epicardial
Continuous tortuosity	1. SION = 2. SUOH 03 3. XT-R	1. SUOH 03 2. SION 3. XT-R(if a small vessel) SION black(if a large vessel)
Small side branch At a bend of the artery	1. SION = 2. SUOH 03 3. XT-R(if a small vessel) SION black(if a large vessel)	1. SUOH 03 2. SION 3. XT-R(if a small vessel) SION black(if a large vessel)
Acute bend	1. SUOH 03 2. SION 3. SION black	1. SUOH 03 2. SION 3. SION black
Crossing invisible channel	1. XT-R 2. SION black 3. SION	Don't touch



Messages

The most important factor that affect retrograde procedural success is whether the channel could be stretched by the wire and/or the micro catheter.

SUOH 03 has very floppy tip profile, therefore less traumatic. Channel injury is less frequent and success rate seems to be improved even through the channel became to be complex.