



Techniques for CTO intervention
“Best Selection and Right direction”
Invited Case Presentation & Focus Review:

Contemporary CTO

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Contemporary CTO

Best selection and Right direction

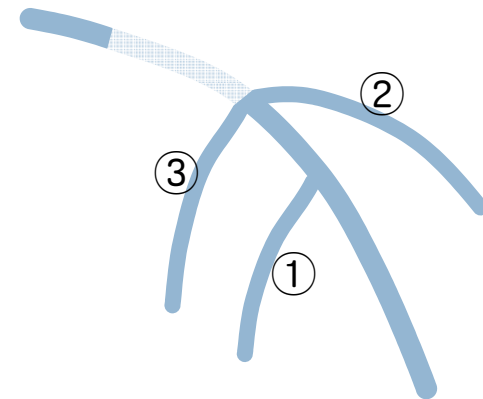


- Strategy
 - Antegrade approach
 - Retrograde approach
- Retrograde approach
 - Channel selection
 - Wire selection for channel cross
 - Wire cross pattern

Retrograde approach

Best selection and Right direction

- Channel selection
 - Safer channel
 - Septal >>> Epicardial
 - LV surface, RV surface, apical, AV groove, Kugel, etc.
 - Easy to cross channel
 - Visible, Straight, and if possible bigger
 - Easy to cross CTO
 - Straight approach to CTO lesion



Retrograde approach

Best selection and Right direction

- Wire selection
 - “Safer is better”, it means “Softer wire is better”.
 - Damage of channel may result cardiac tamponade at least lose a chance of channel cross.
 - “Suoh” is my current first choice wire.
- Wire cross pattern
 - As follows

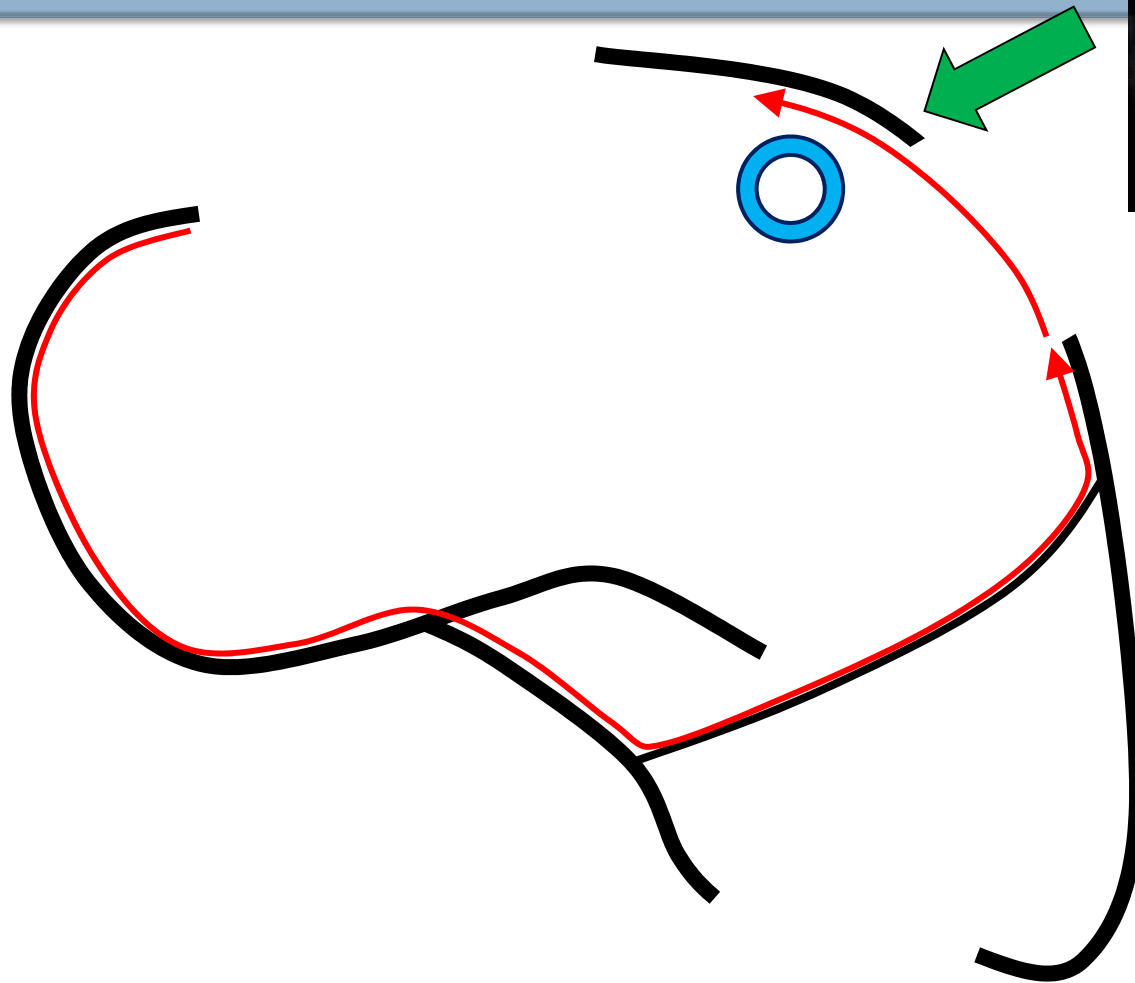
Definition of wire cross pattern in RETRO

		Direction of wire cross	
		Antegrade	Retrograde
Dilation of CTO segment before wire cross	Yes	CART	Reverse CART
	No	Kissing Wire Cross	Retrograde Wire Cross

All procedure must be classified as “retrograde approach” when a wire reached to distal end of CTO lesion through any kind of collateral channel.

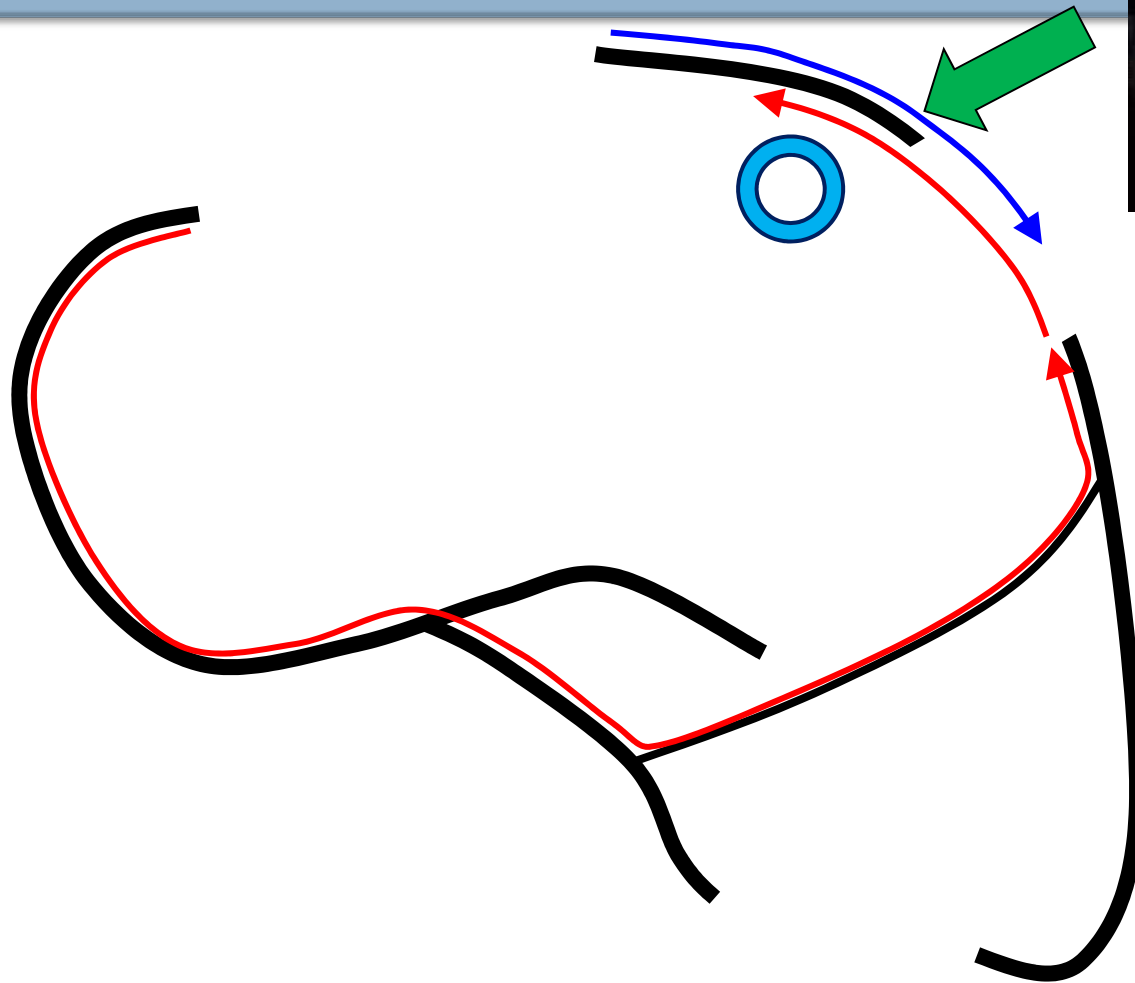
RETROgrade technique

(1) Retrograde Wire Cross



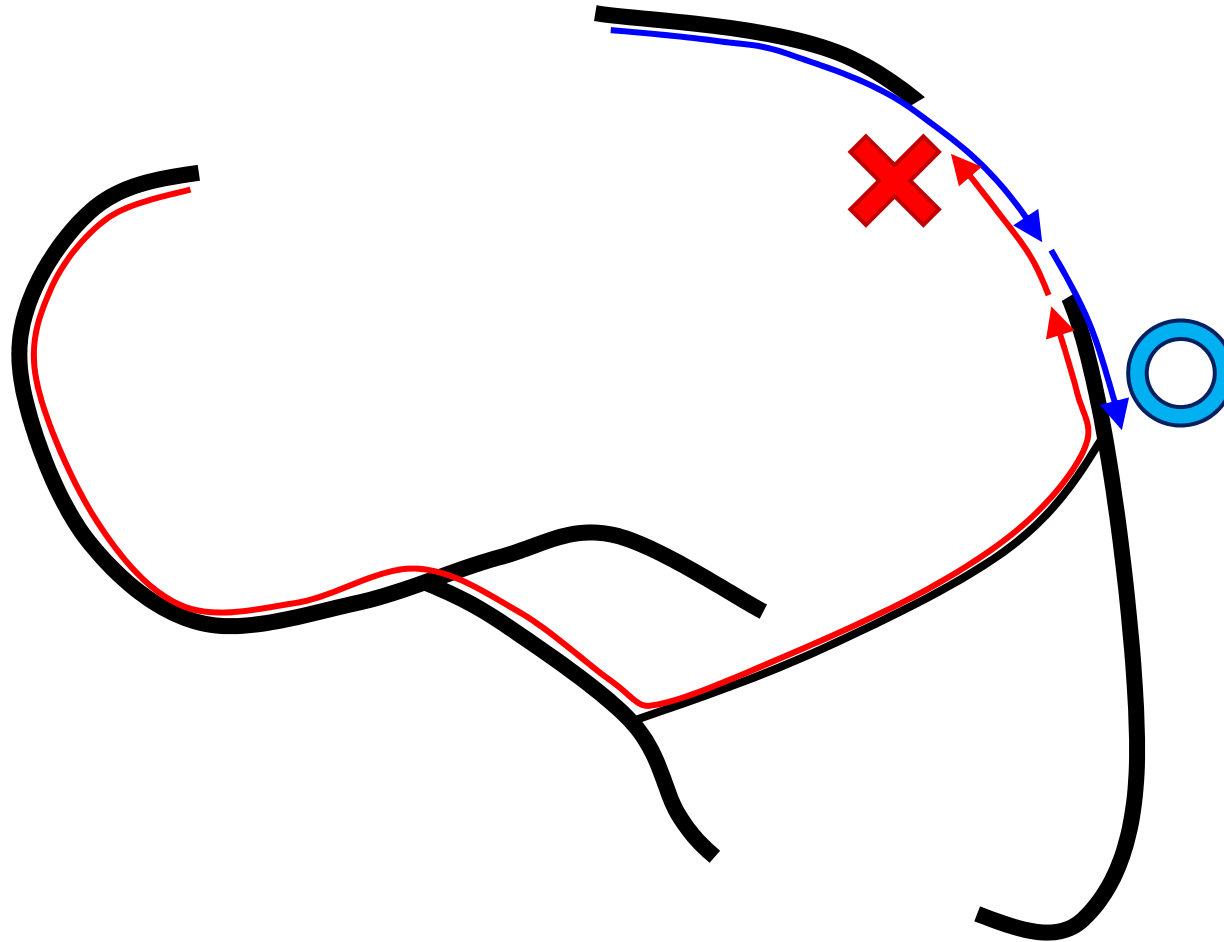
RETROgrade technique

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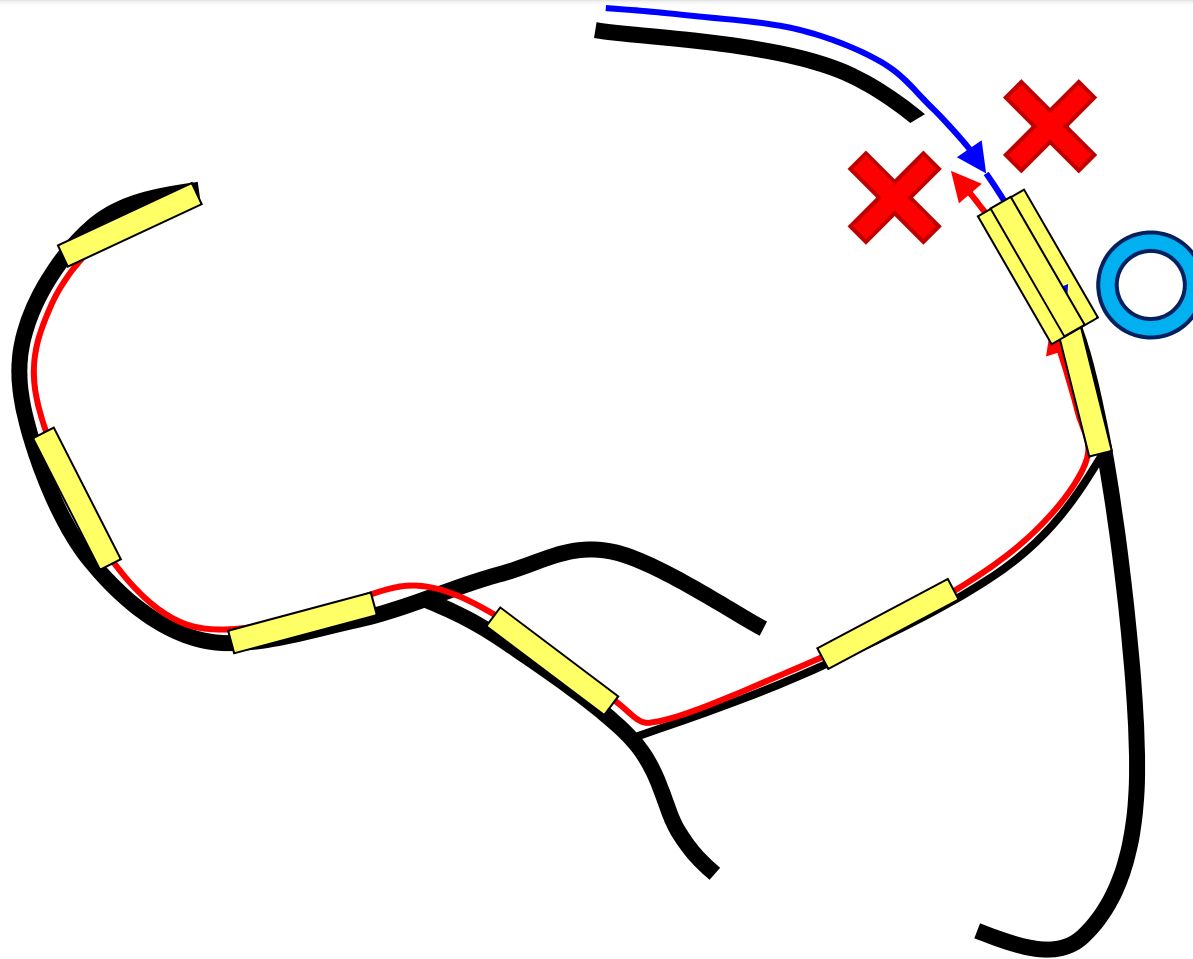
RETROgrade technique

(2) Kissing Wire Cross

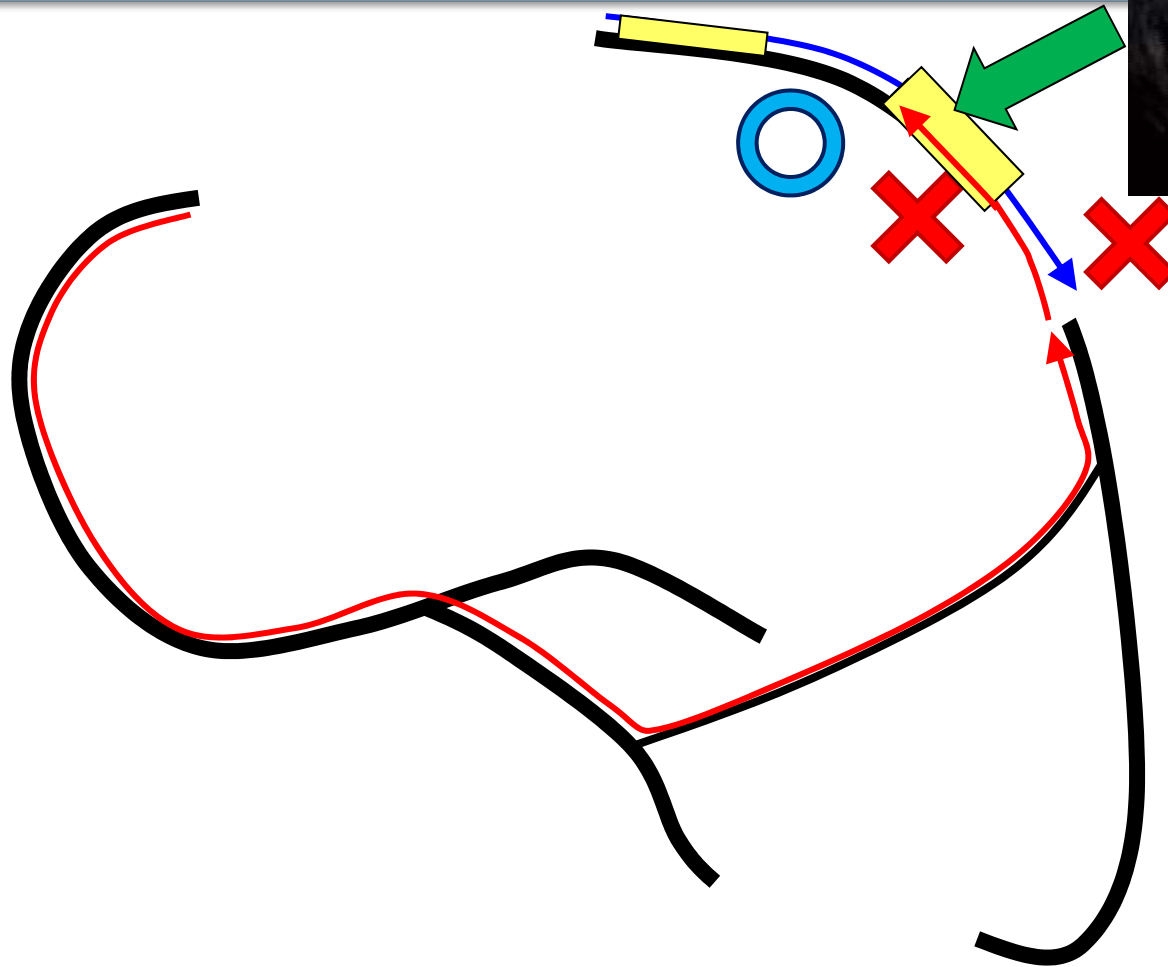


RETROgrade technique

(3) CART, not for epicardial RETRO



RETROgrade technique (4) reverse CART



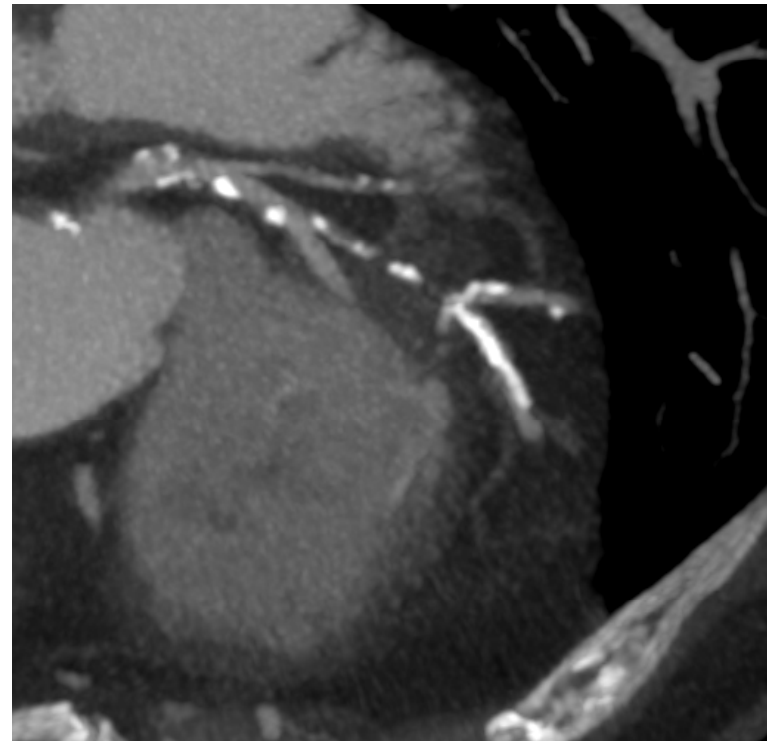
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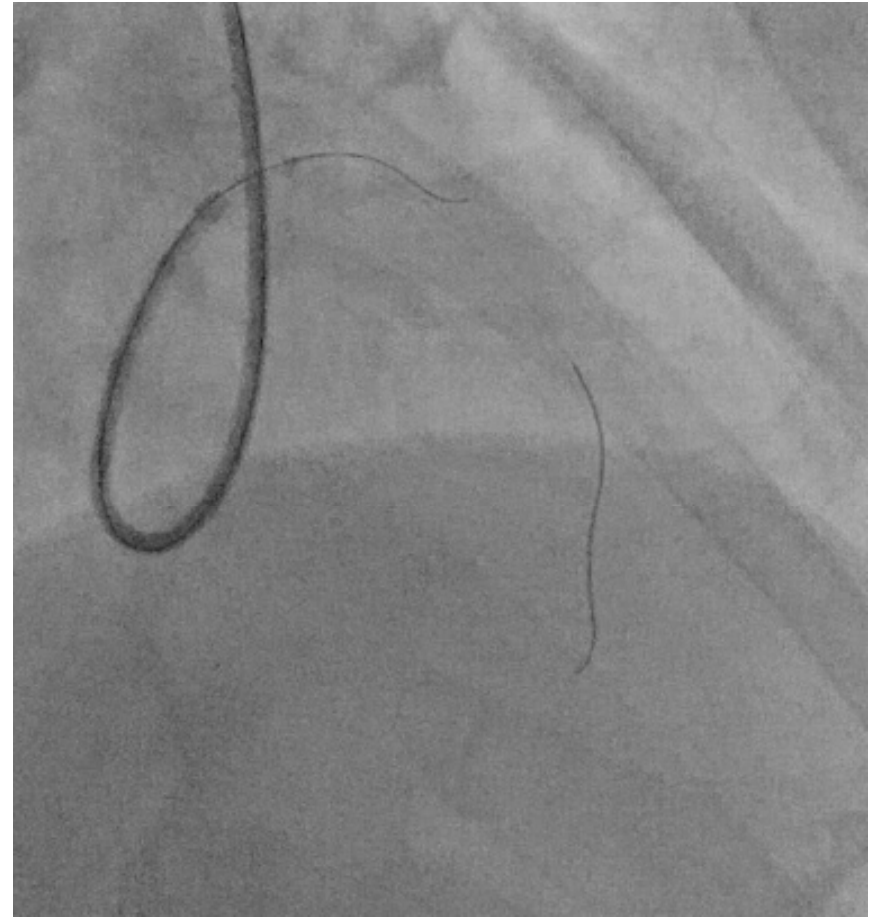
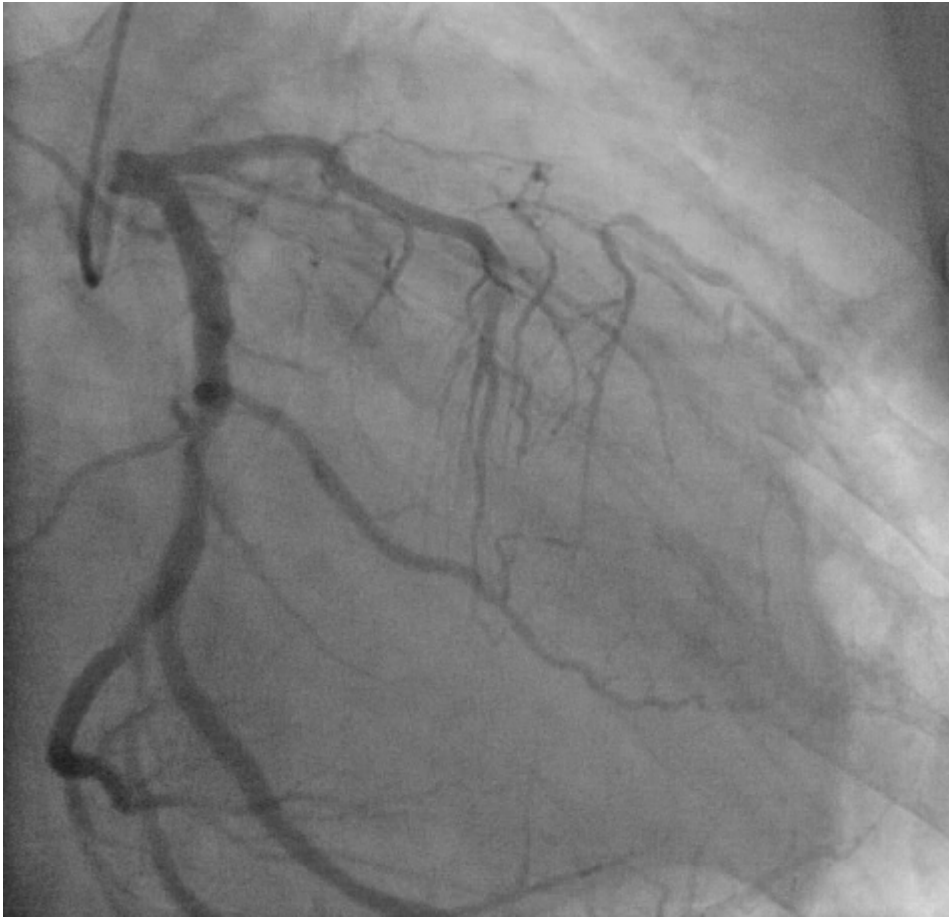
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Case Presentation

- 84 y.o. Male
 - Aged but very healthy gentleman
- Positive ischemia in anterior wall
- Mild symptom (CCS 2)
- HT, DL, X-smoker



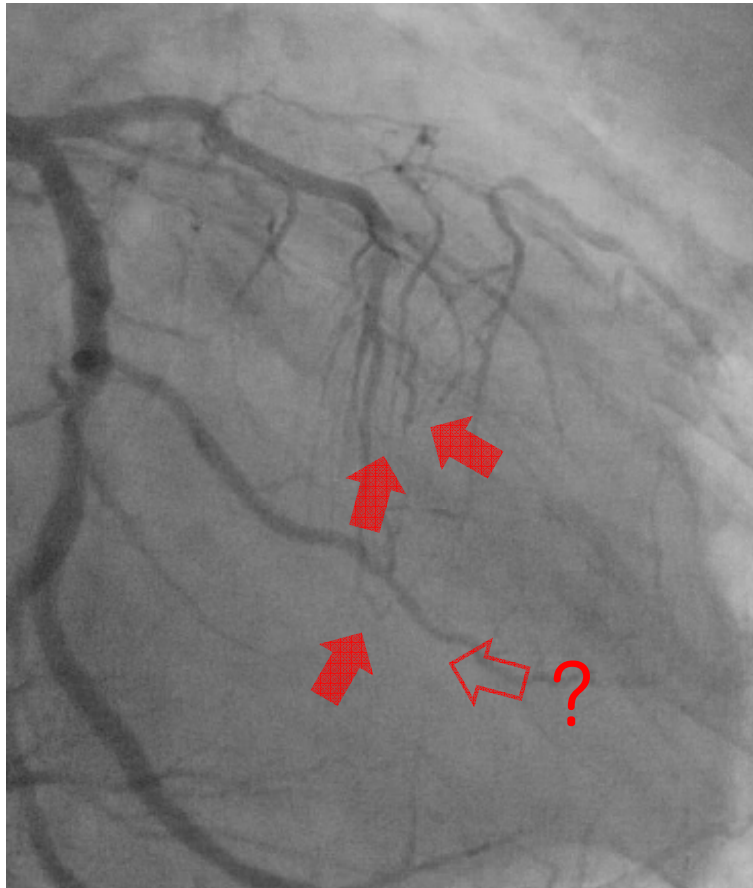
pre PCI → antegrade
approach



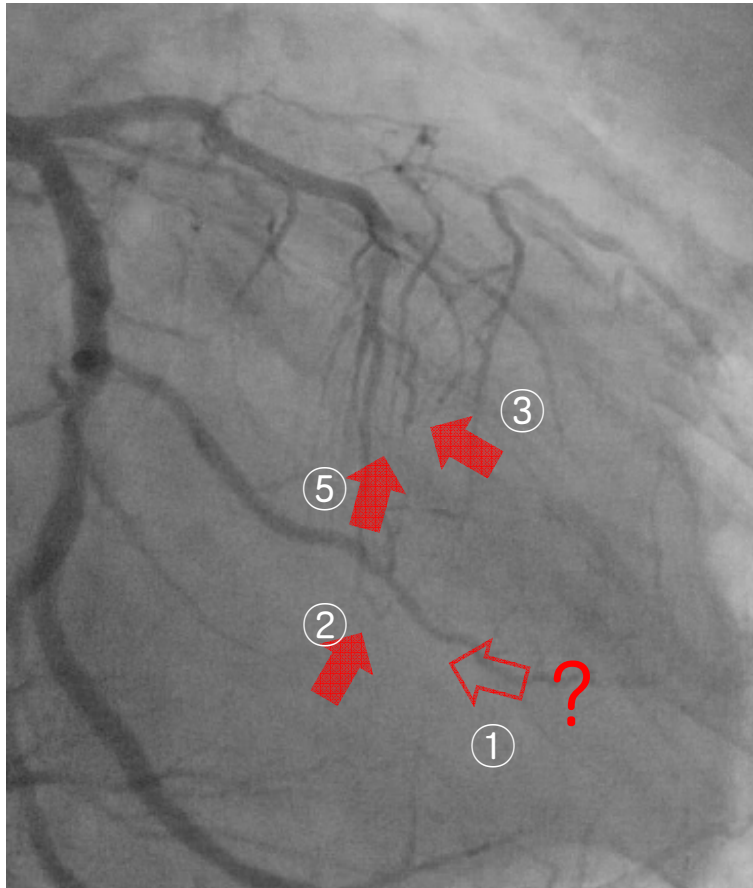
Channel selection



Channel selection



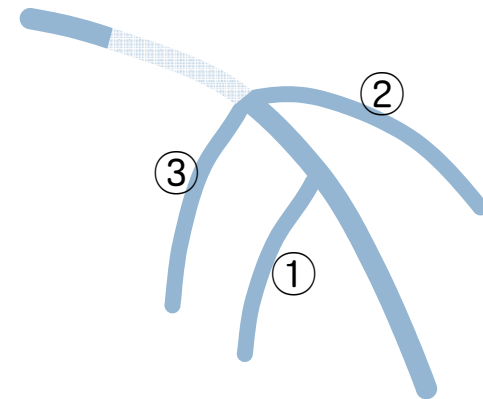
Channel selection ; priority



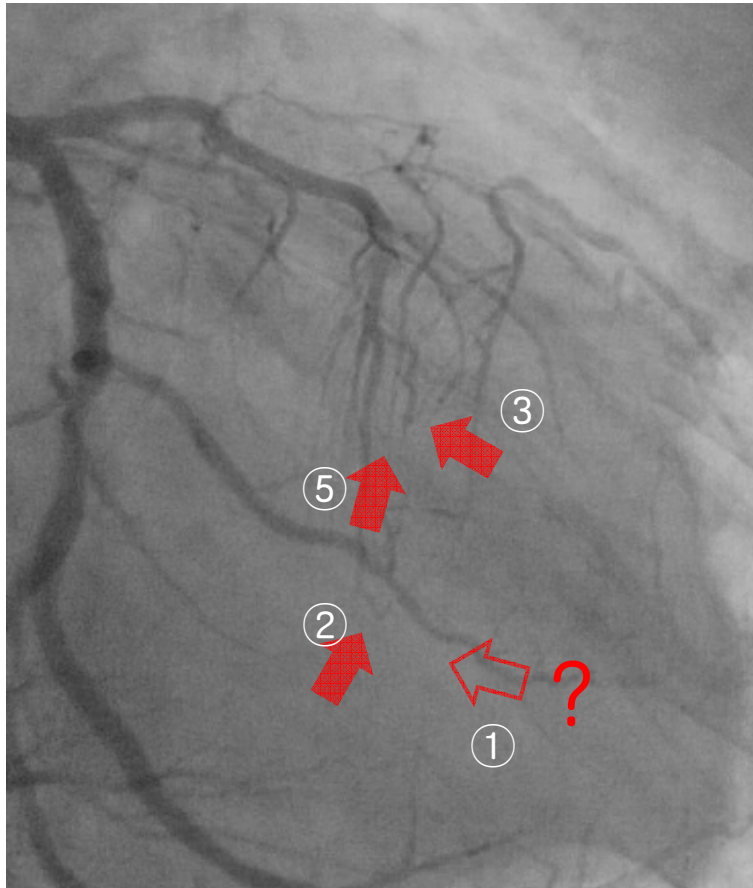
Retrograde approach

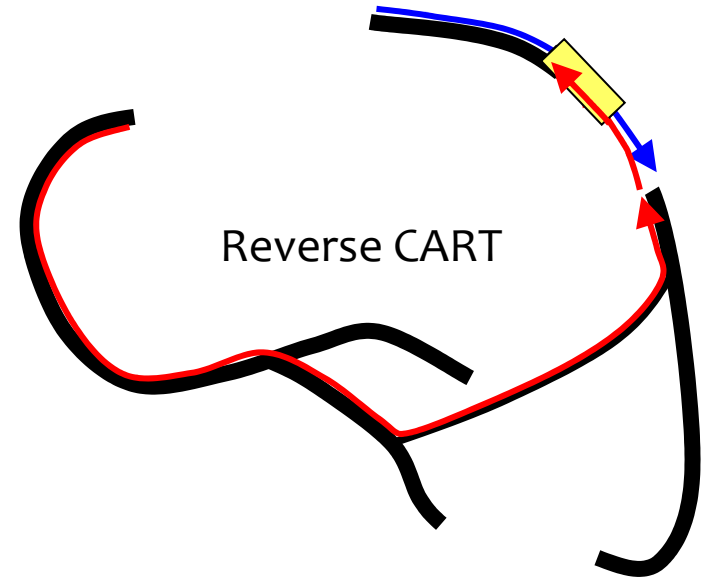
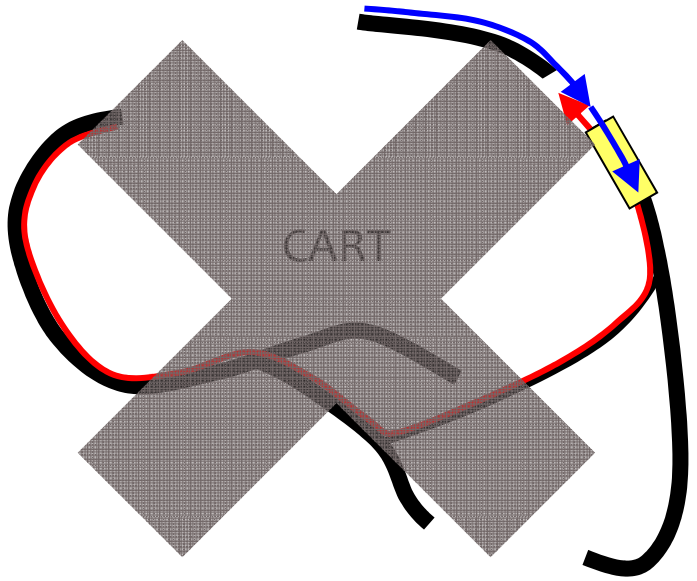
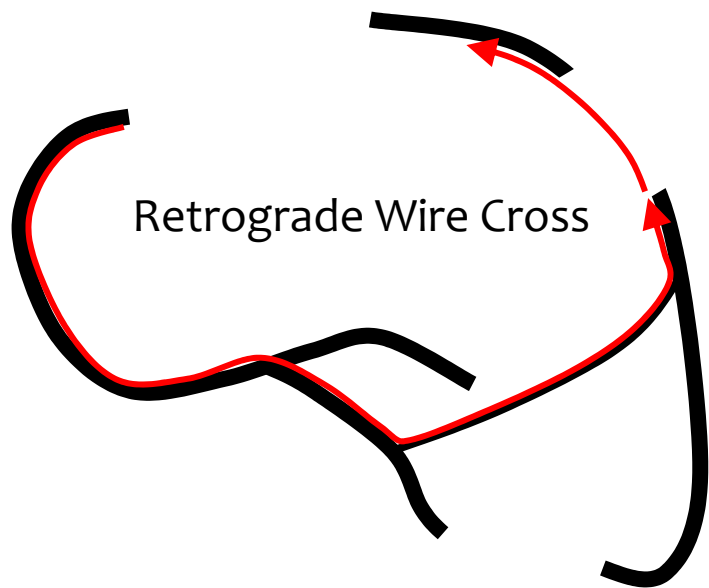
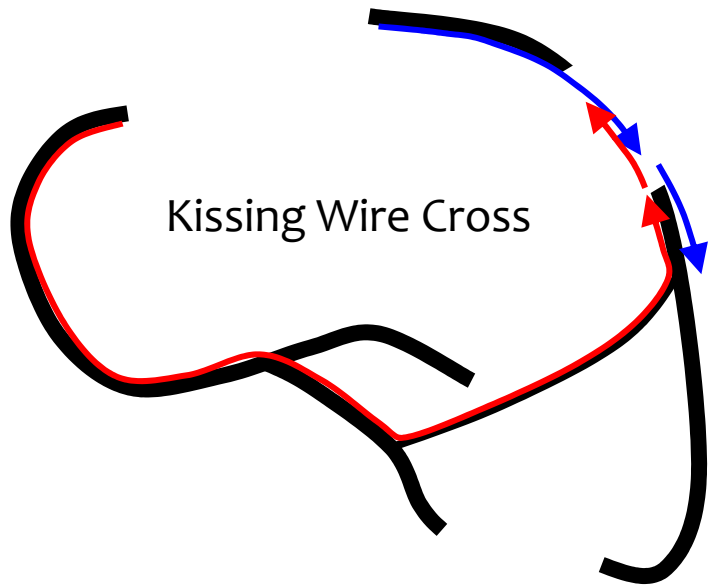
Best selection and Right direction

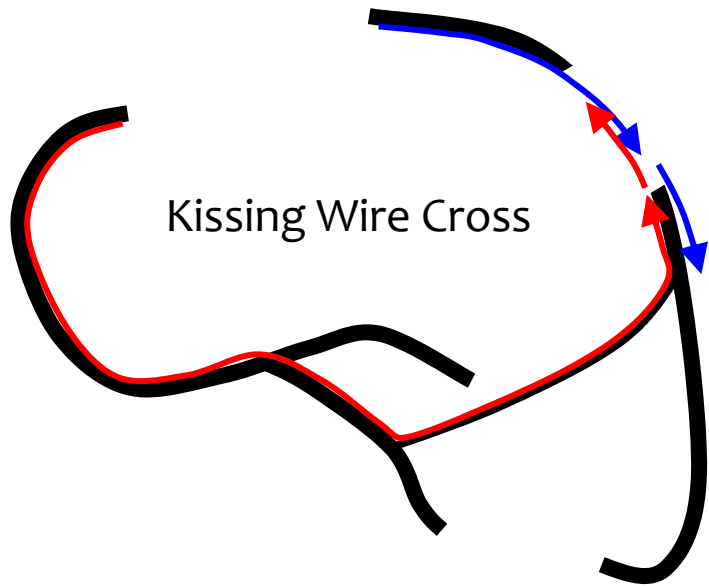
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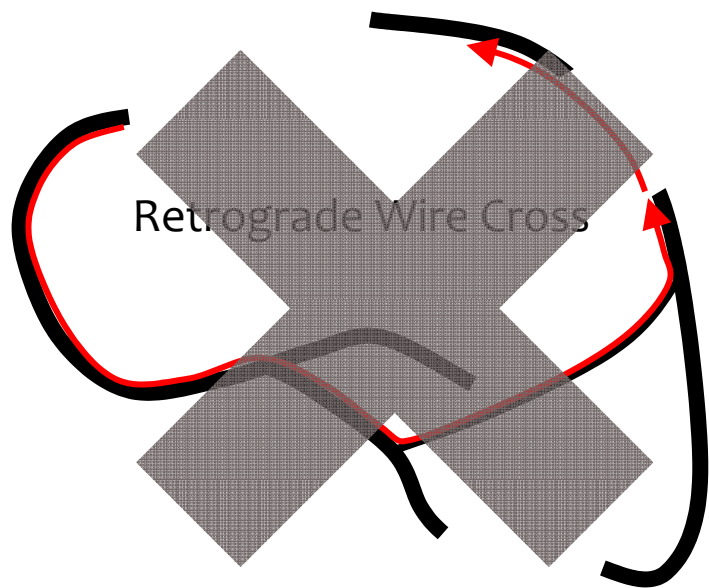
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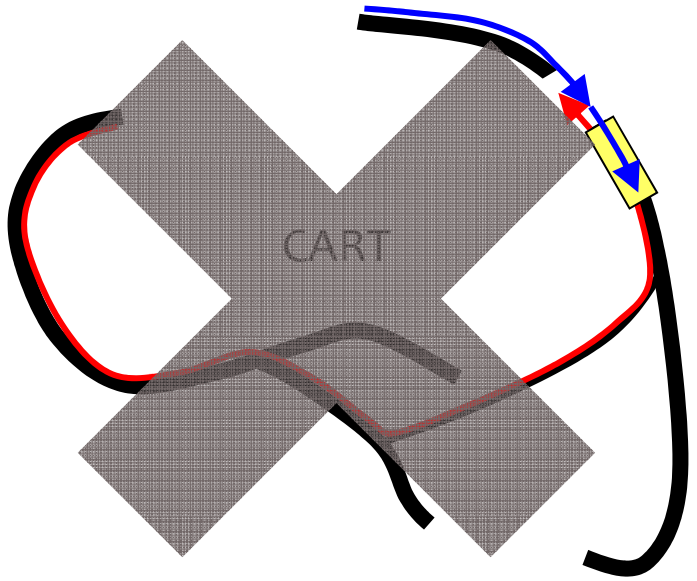




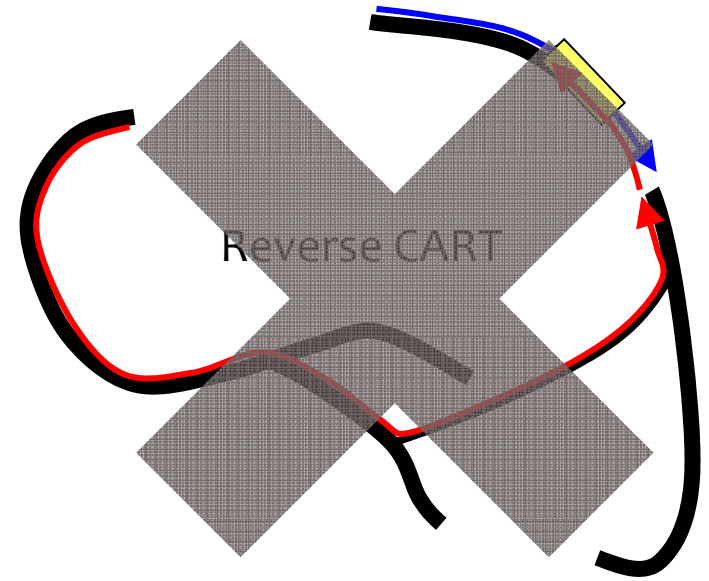
Kissing Wire Cross



Retrograde Wire Cross

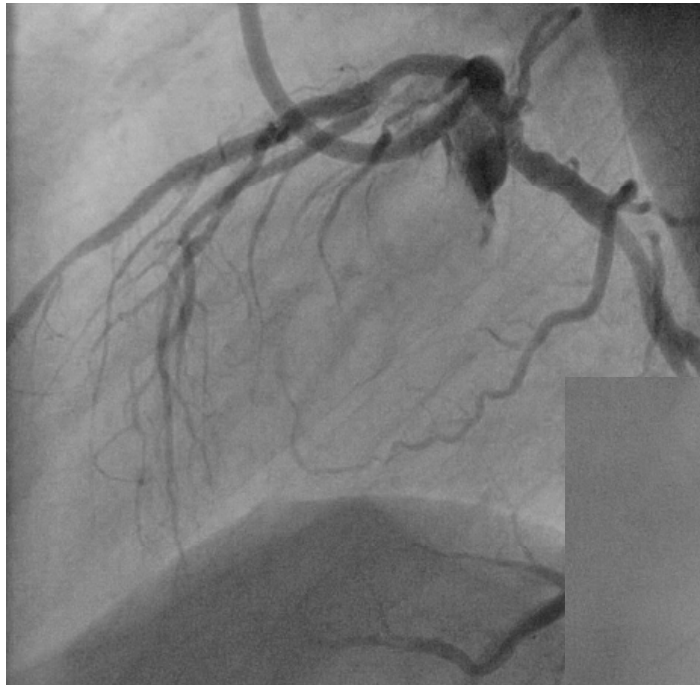


CART



Reverse CART

Final Result



What is a contemporary CTO ?



Contemporary CTO consists of

- Information from imaging modalities,
- Understanding essentials of antegrade and retrograde approach, and
- Adjusting strategy and device use depending on situation.