

TCT 2016 : Walter E. Washington Convention Center, Room 147 Level-1

*DIDACTIC SESSION: THE CTO SUMMIT: CONQUERING THE FINAL FRONTIER, PART 1 > Session I.  
Develop a CTO Skill Set and Build a CTO Program: Learn From Those Who Have Done It*

2016/10/31 15:40 - 15:55

# **MICROCATHETERS AND GUIDE EXTENSIONS : WHAT DO I REALLY NEED AND WHEN/HOW SHOULD I USE THEM?;**

# Disclosure Statement of Financial Interest

Within the past 12 months, I or my spouse/partner have had a financial interest/arrangement or affiliation with the organization(s) listed below.

## Affiliation/Financial Relationship

- Endowed Department
- Consulting Fees/Honoraria

## Company

- TERUMO
- SHIONOGI, DAIICHI-SANKYO, ASTRAZENEKA, DAINIHON-SUMITOMO, MEDTRONIC, KANEKA, BIOSENSORS, GOODMAN, TOHSHIBA MEDICAL, ORBUS NEICH, ASAHI INTEC, FUJIFILM MED-CAL, SHIMADZU, BRISTOL-MAYERS

# Microcatheter / Guide-Extension

- What is the benefit of using MC?
  - GW control
  - Tip injection
  - Coil implantation
- What is the situation for using Guide-Extension?
  - Device deliver
  - Retrograde wire “pick-up”

# Microcatheter / Guide-Extension

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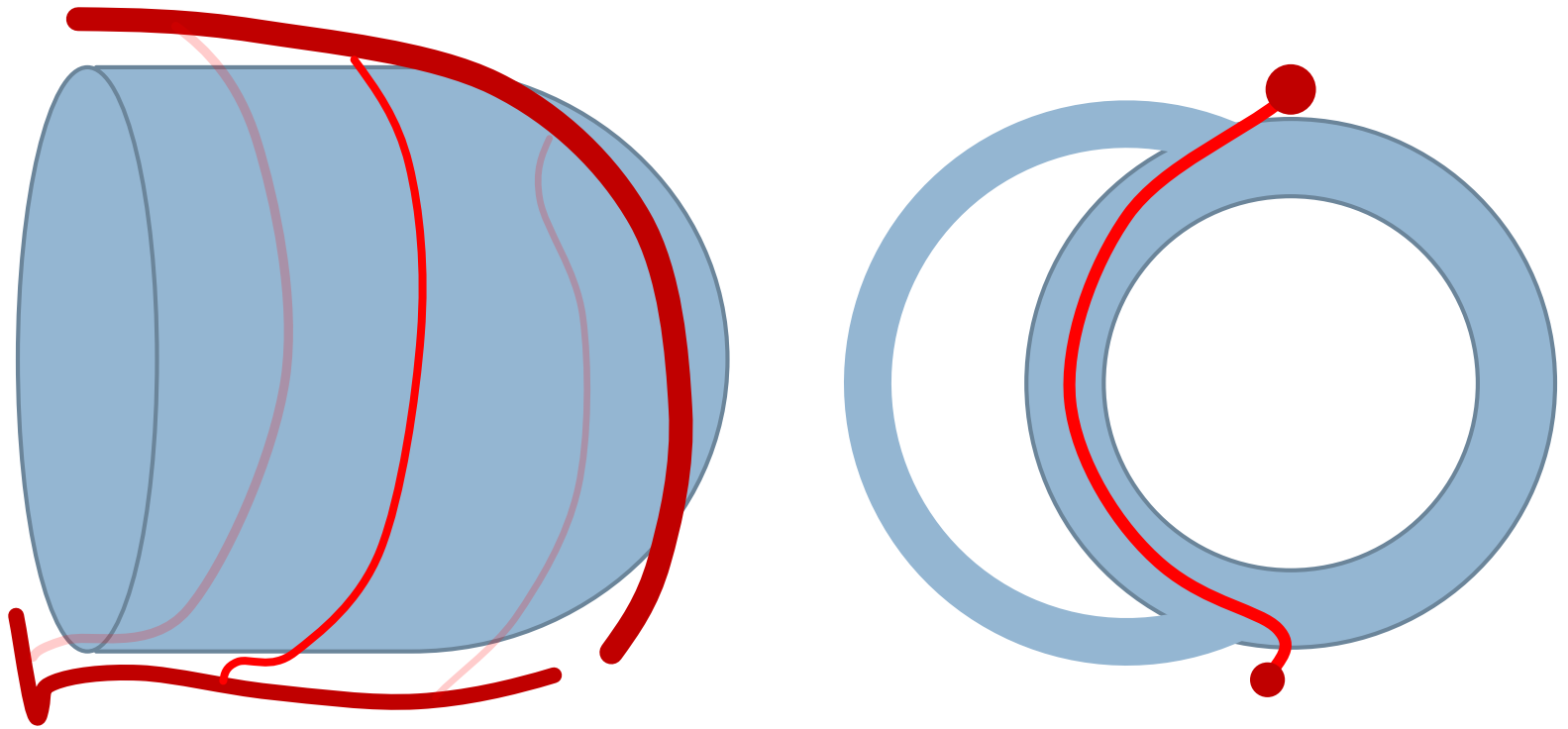
- What is the benefit of using MC?
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# Microcatheter / Guide-Extension

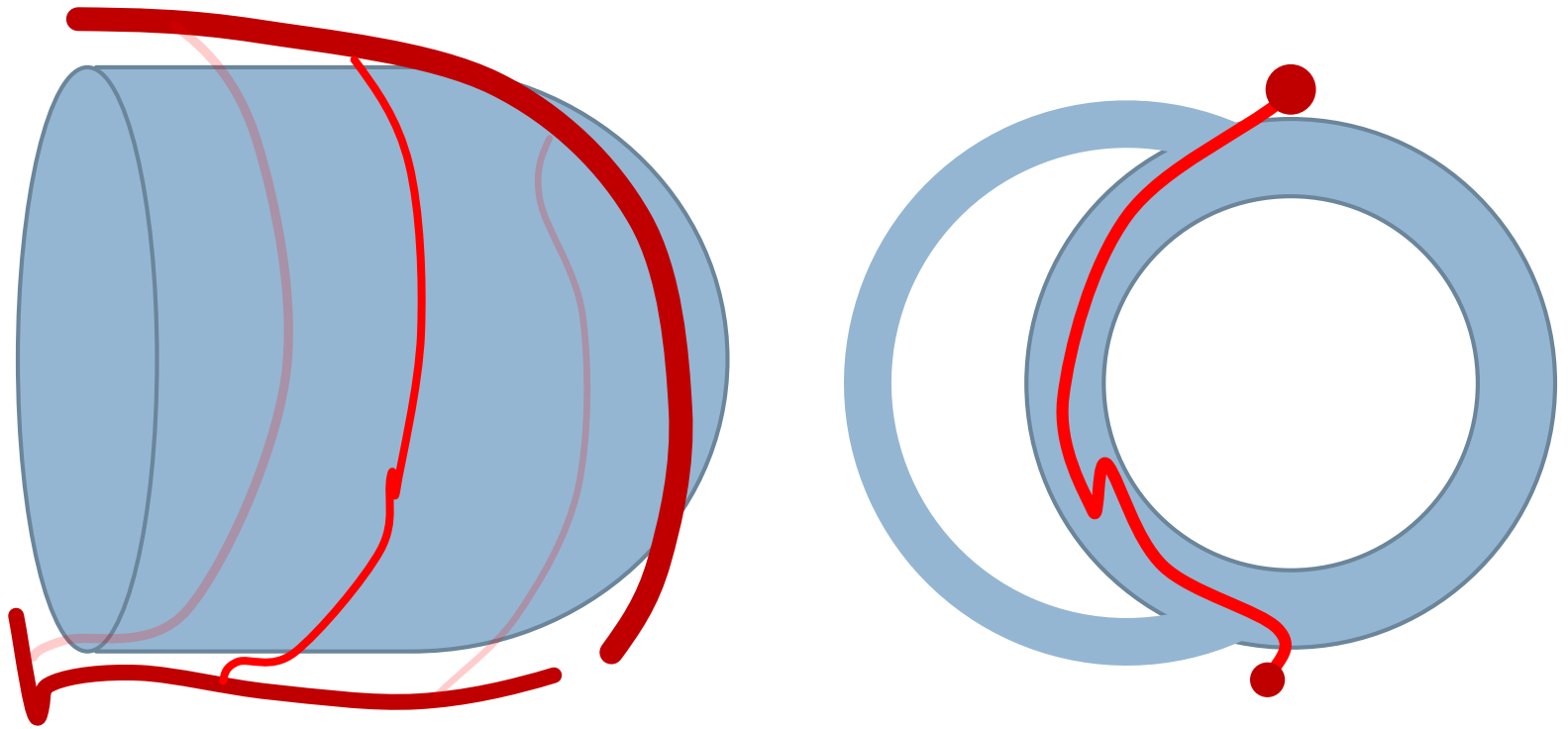
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- What is the benefit of using MC?
  - GW control
  - **Tip injection**
  - Coil implantation

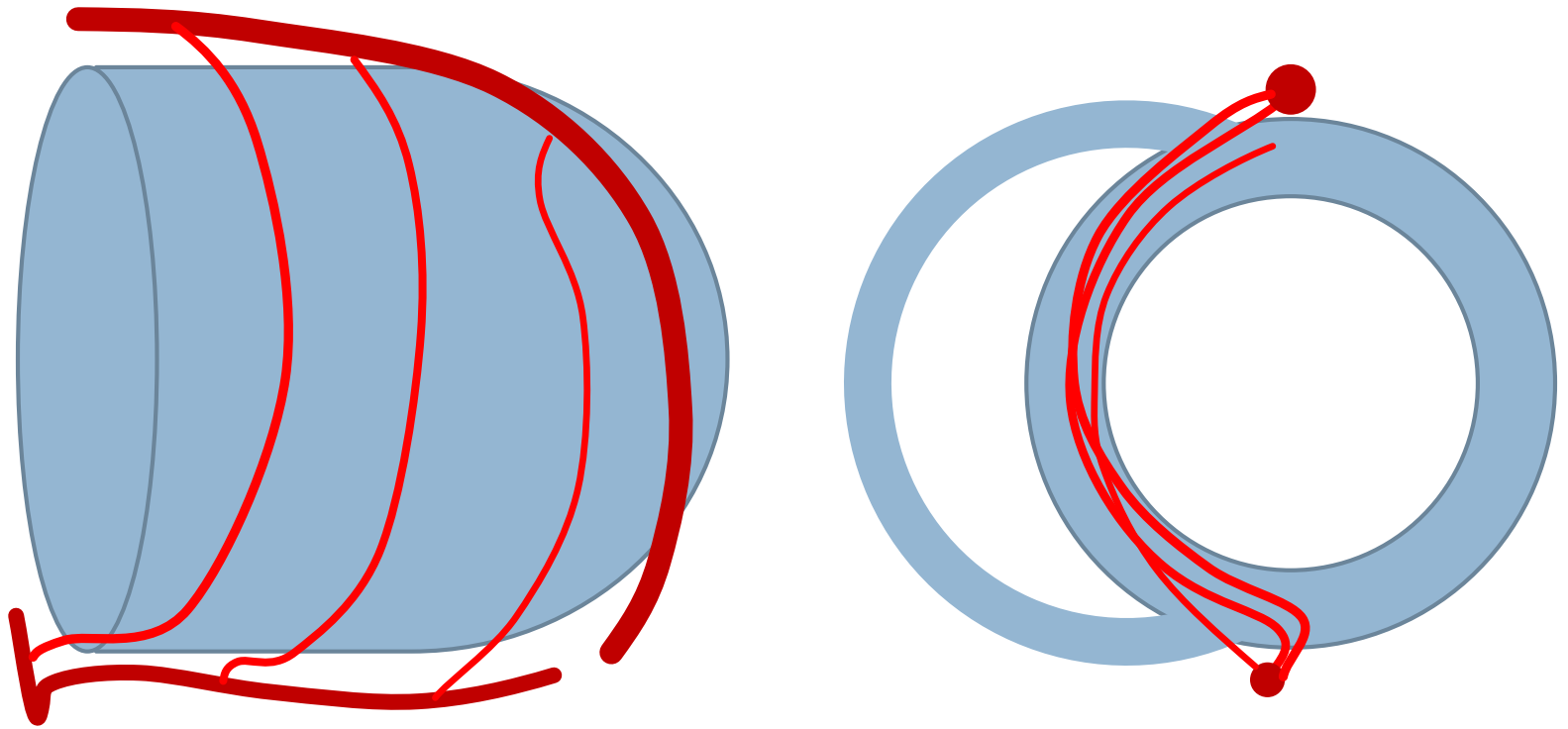
# Optimal view for septal channel



# Optimal view for septal channel

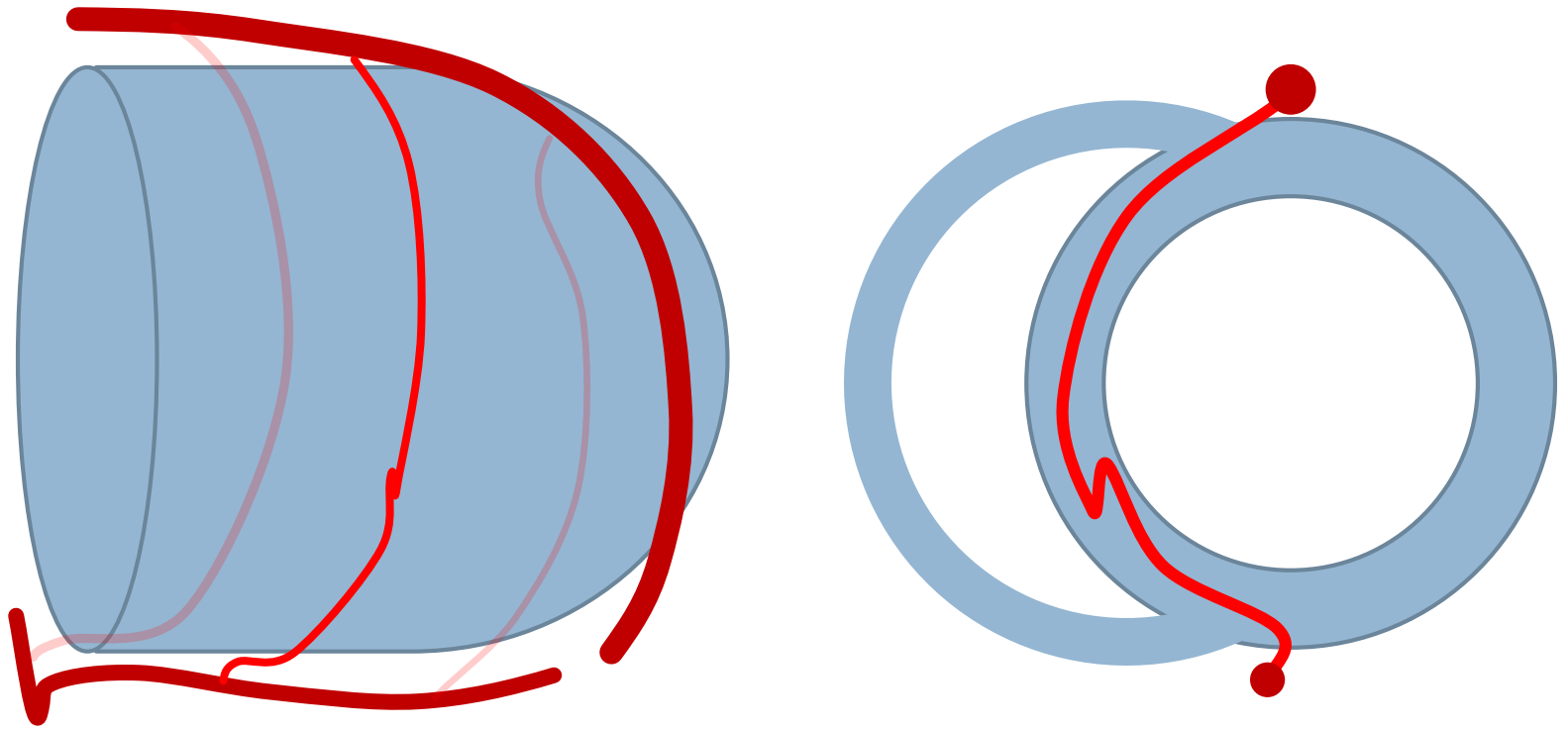


# LAO view needs Tip injection

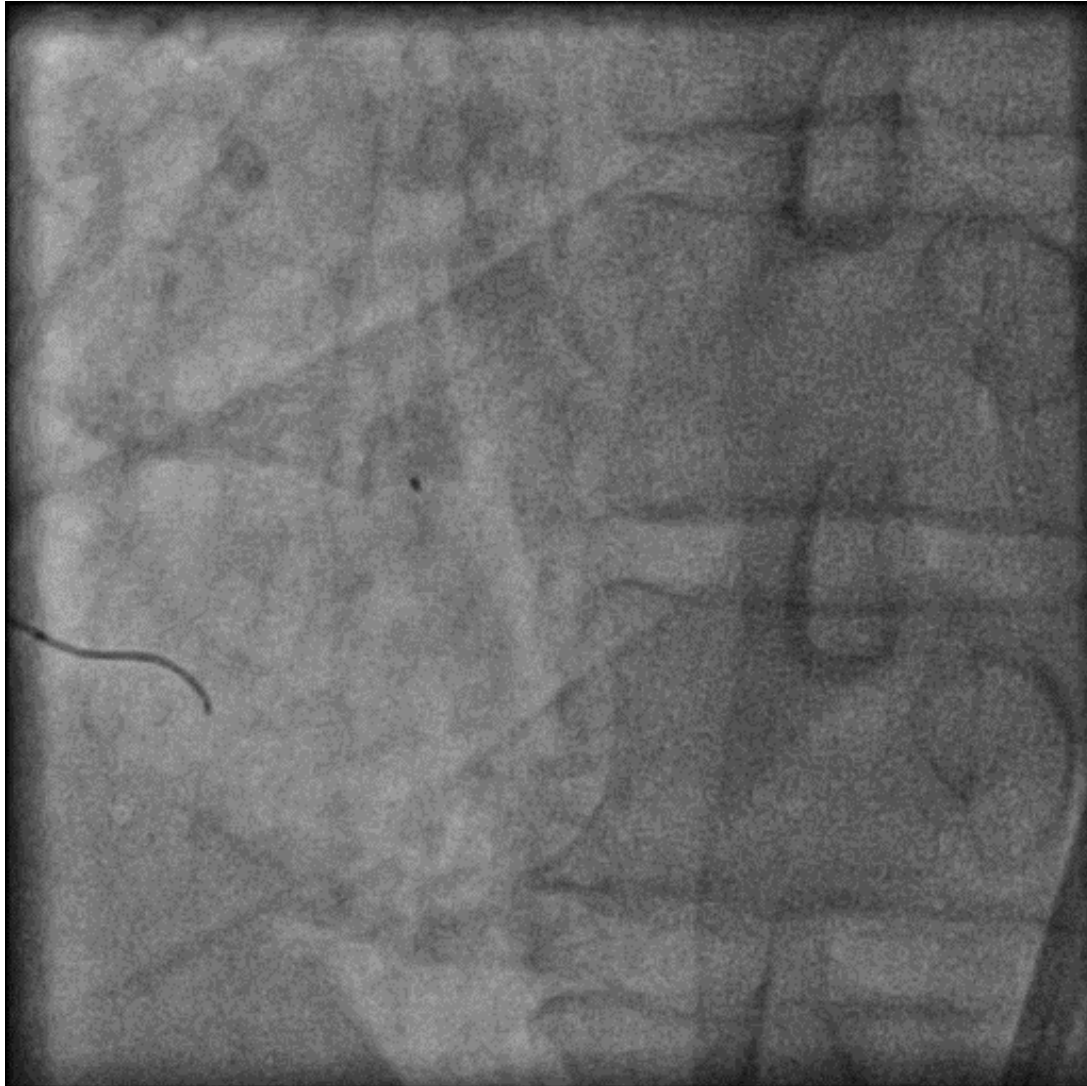




# Optimal view for septal channel



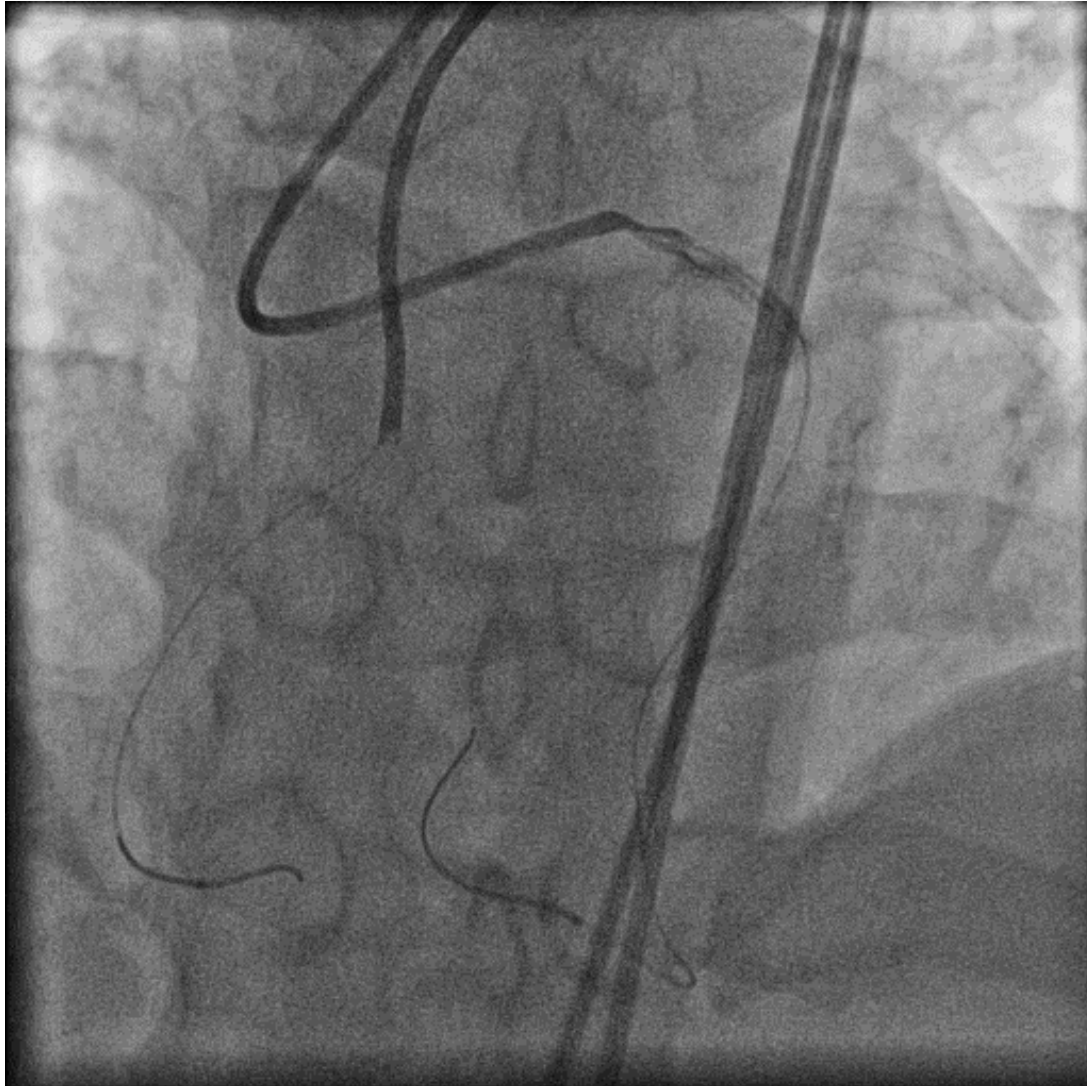
# Tip injection with Microcatheter



# Tip injection reveals difficult bend



# Information makes everything smooth

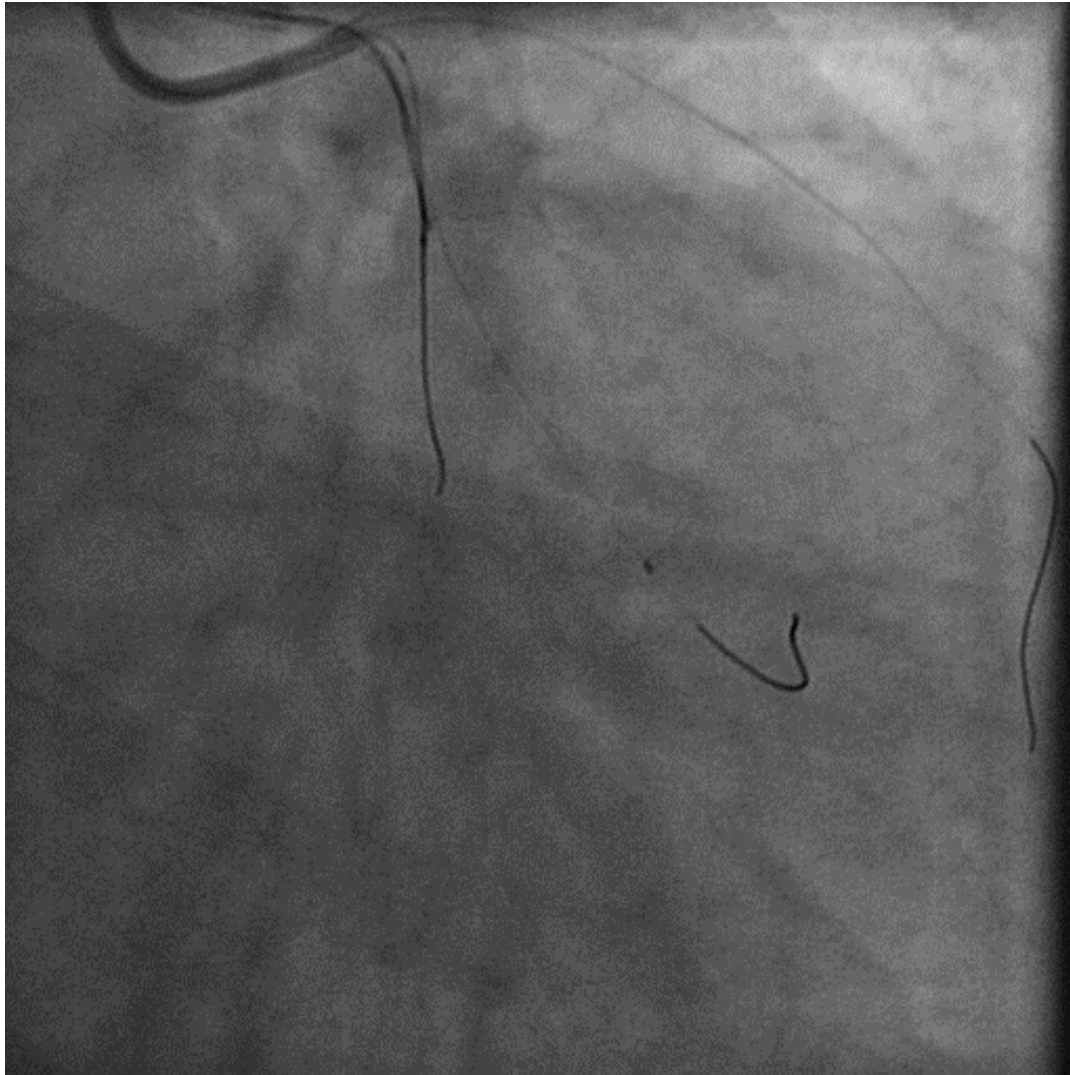


# Microcatheter / Guide-Extension

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- What is the benefit of using MC?
  - GW control
  - Tip injection
  - **Coil implantation**

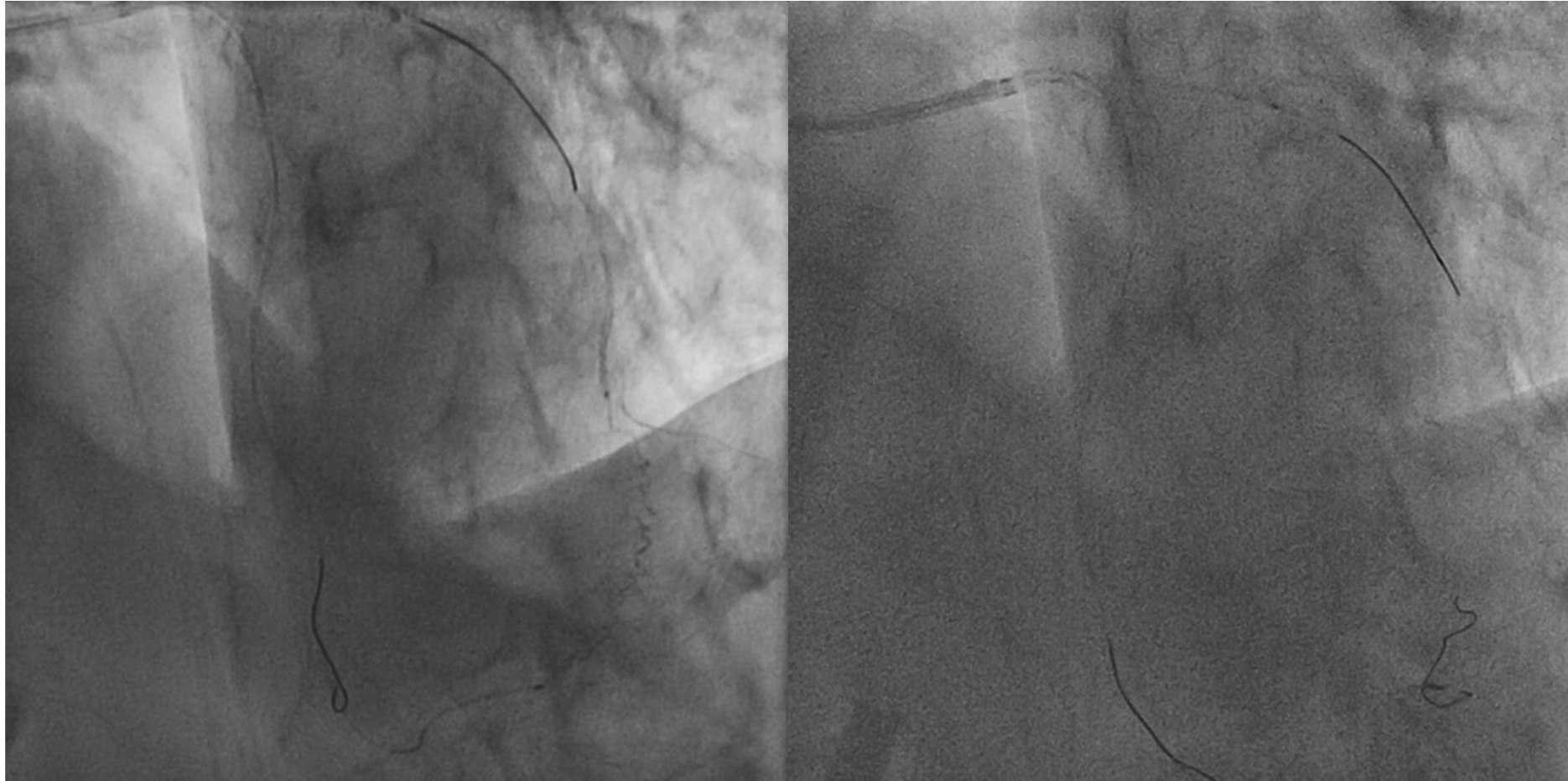
# Mid LCX CTO



# LV surface channel RUPTURE

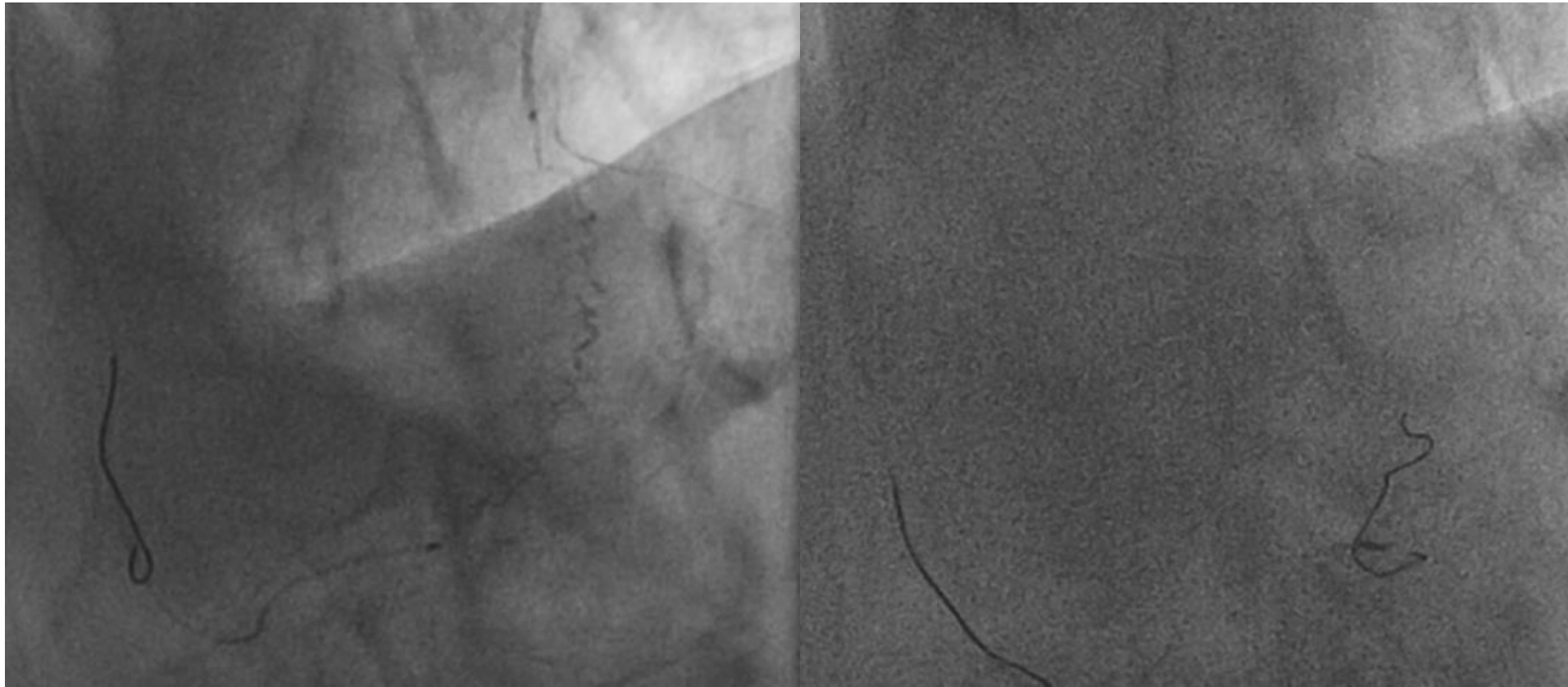


# LV surface channel RUPTURE

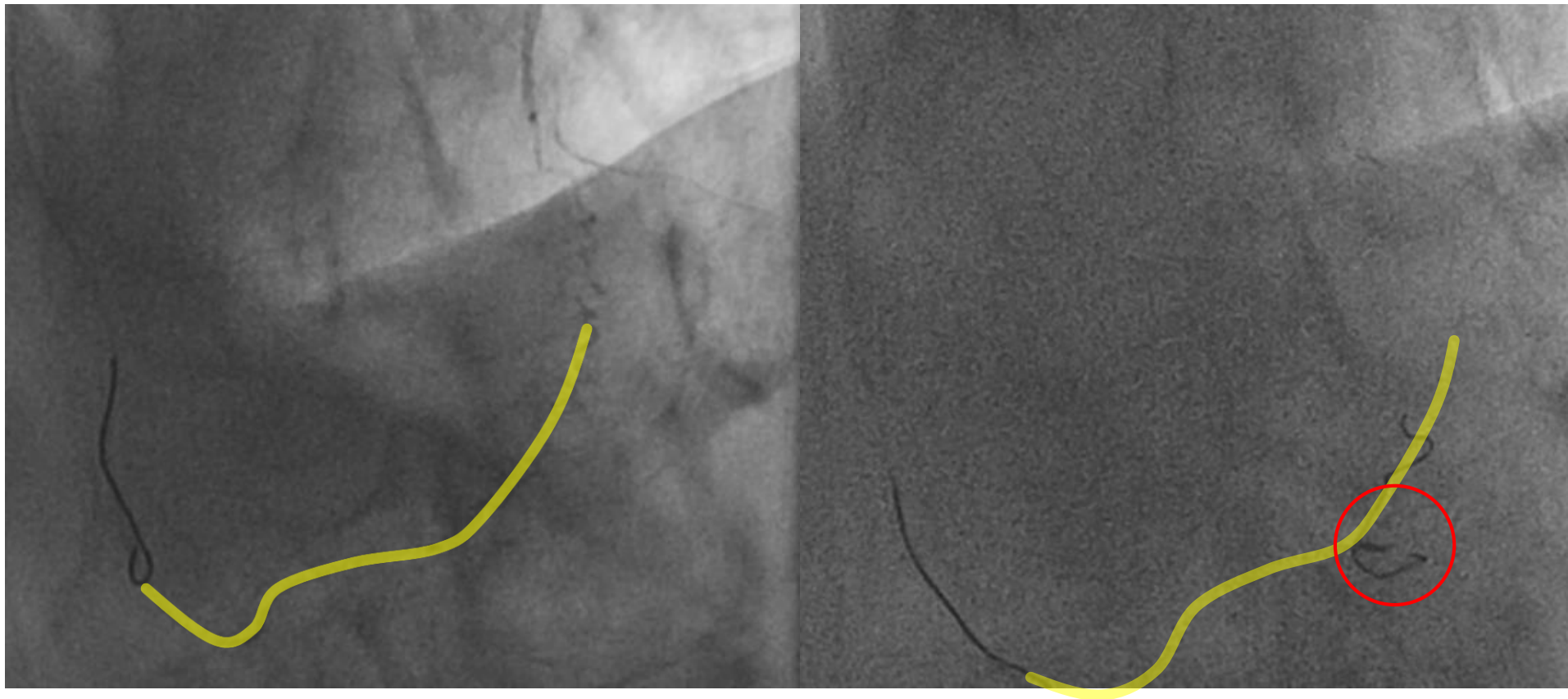




# LV surface channel RUPTURE



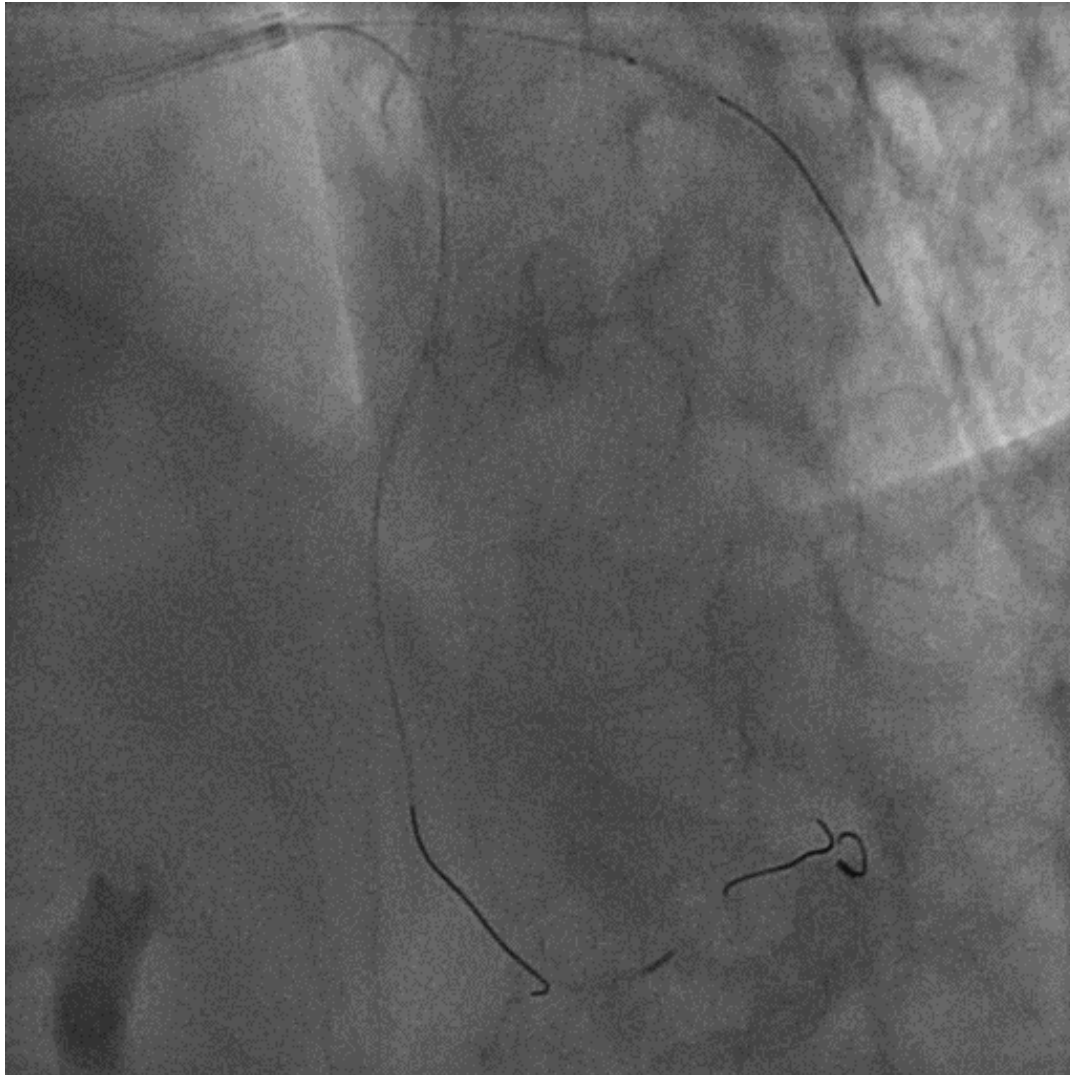
# LV surface channel RUPTURE



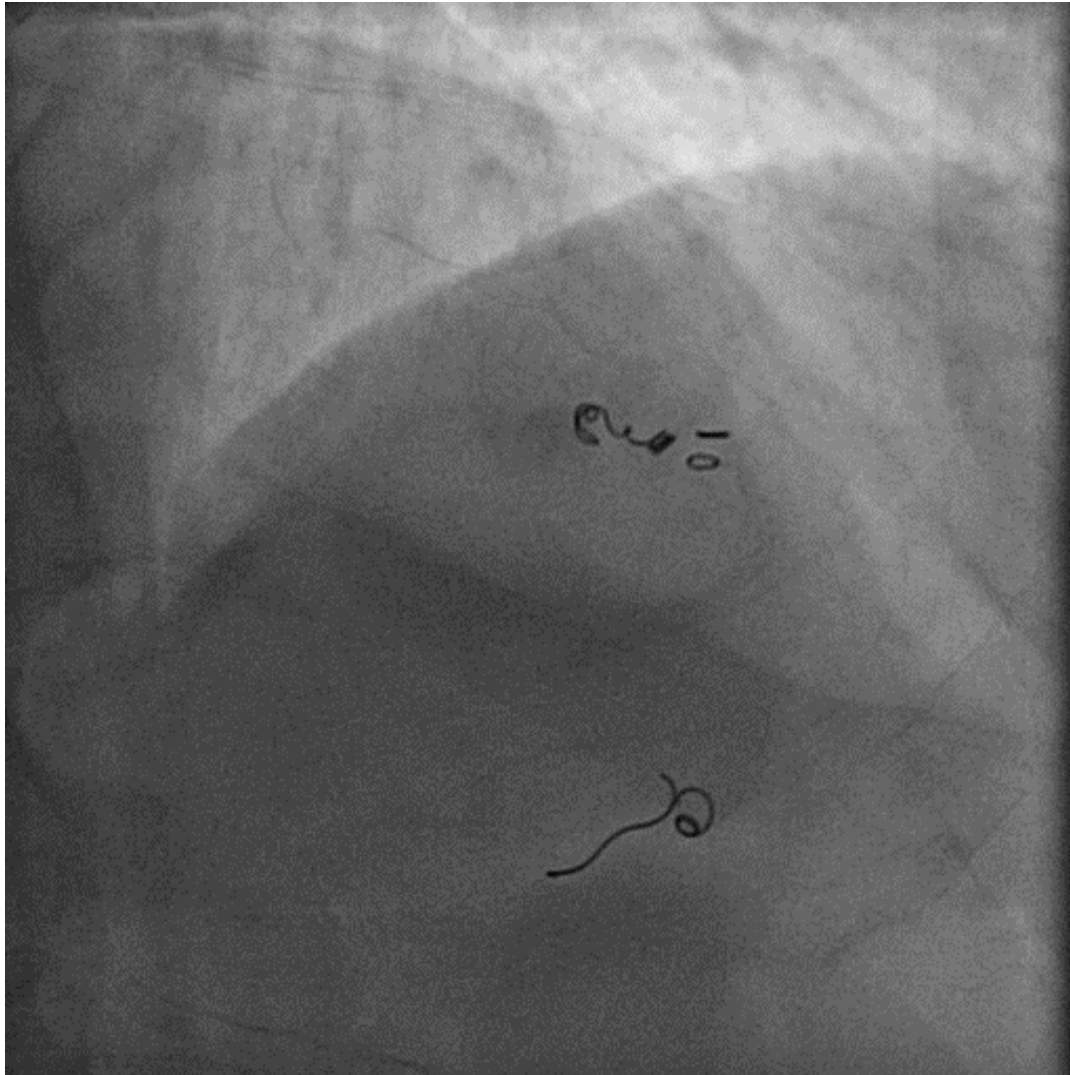
# LV surface channel RUPTURE



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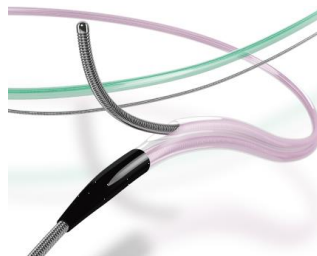
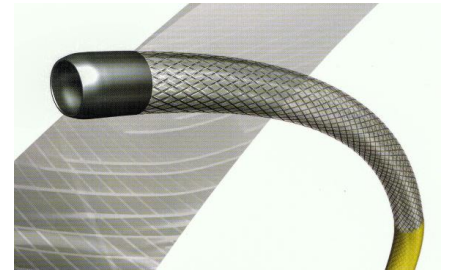
# LV surface channel RUPTURE



# Microcatheter / Guide-Extension

- What is the benefit of using MC?
  - GW control
  - Tip injection
  - Coil implantation
- **Which is the BEST Microcatheter ???**

# So many MCs...



# Selection of MC

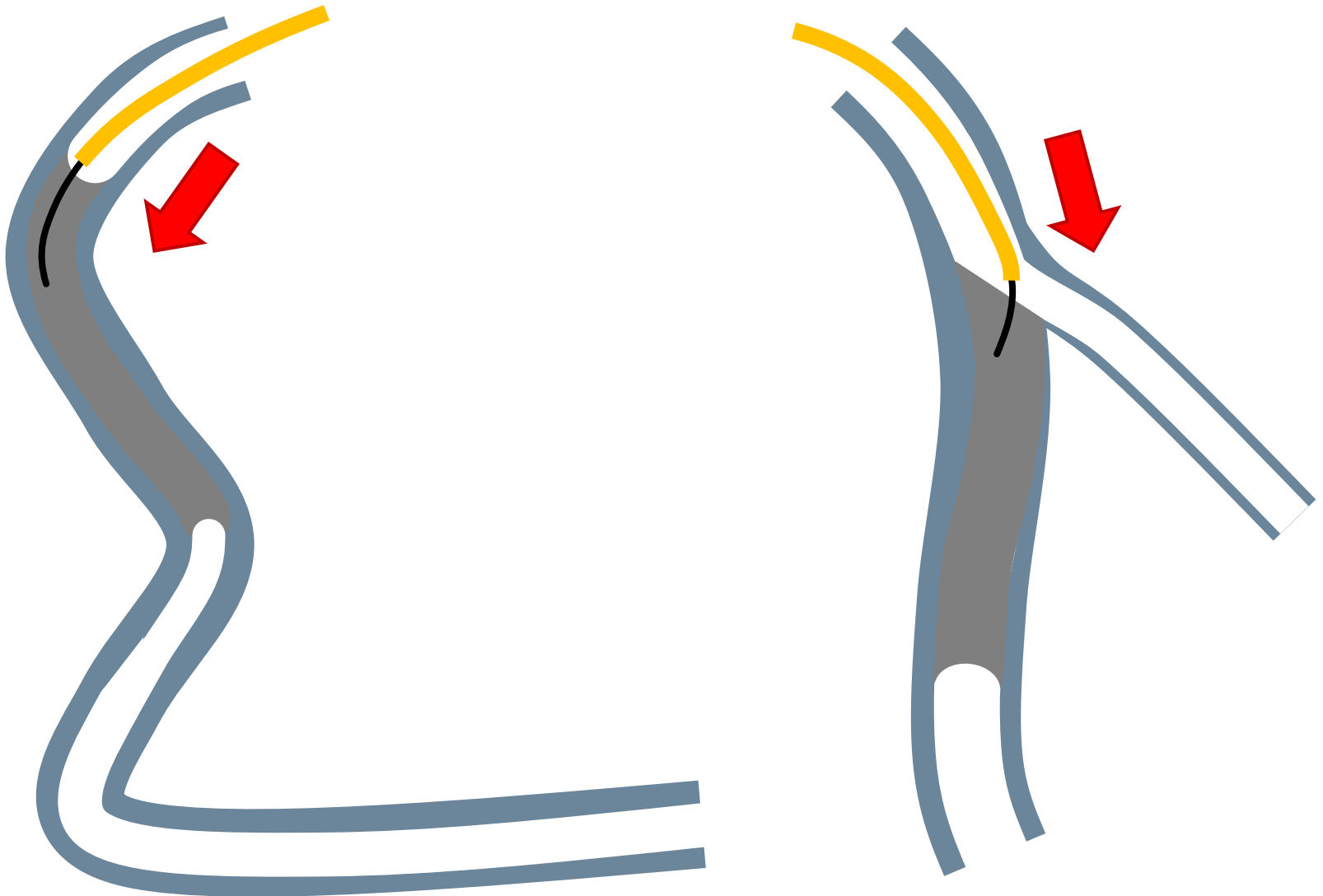
- How to select MC ???
  - Each MC has different structure and strong point
  - Best solution is “try to use by yourself”
  - But some fundamental points are there.
    - Tip flexibility
    - Resistance
    - Compatibility with coil



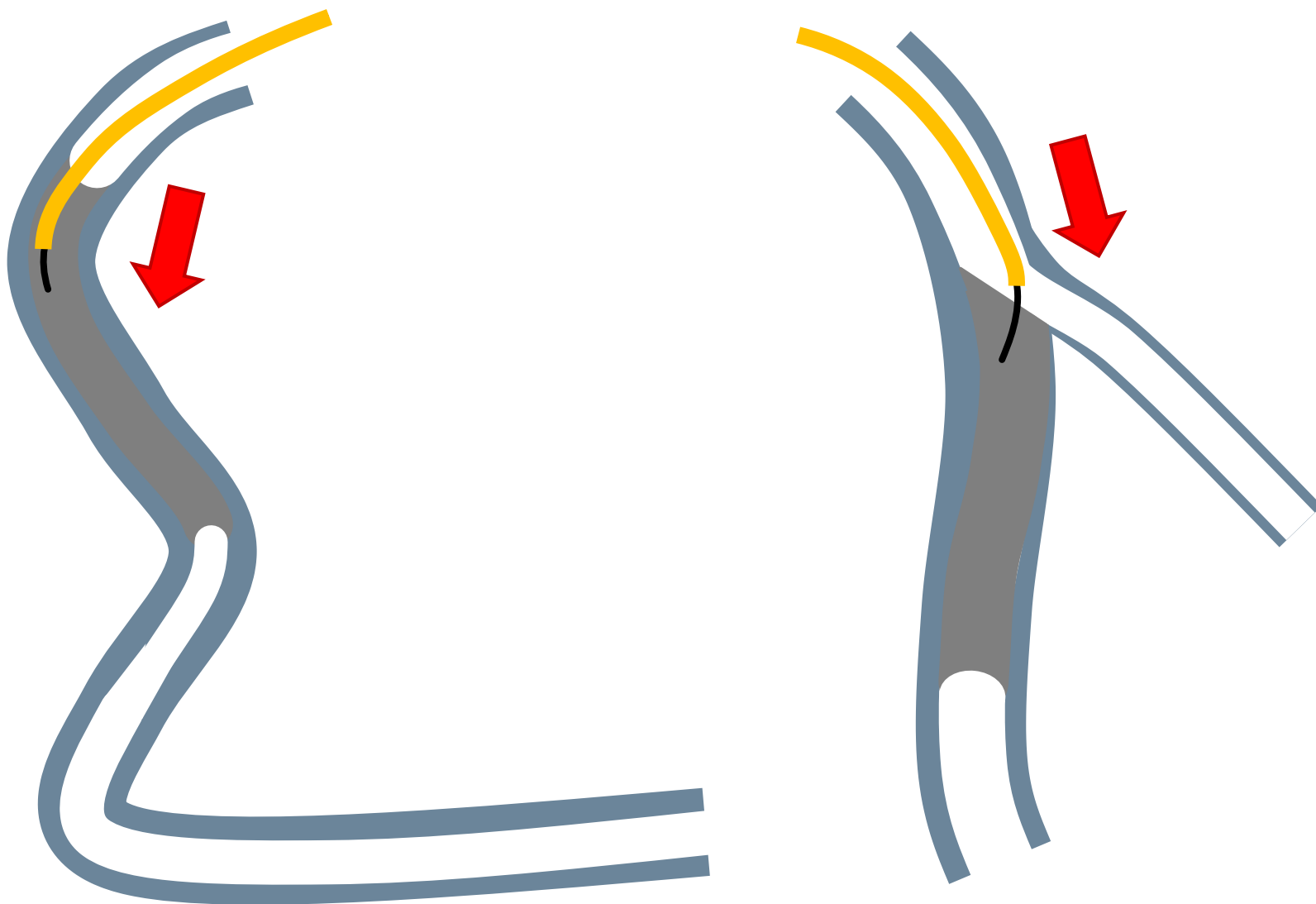
# Selection of MC

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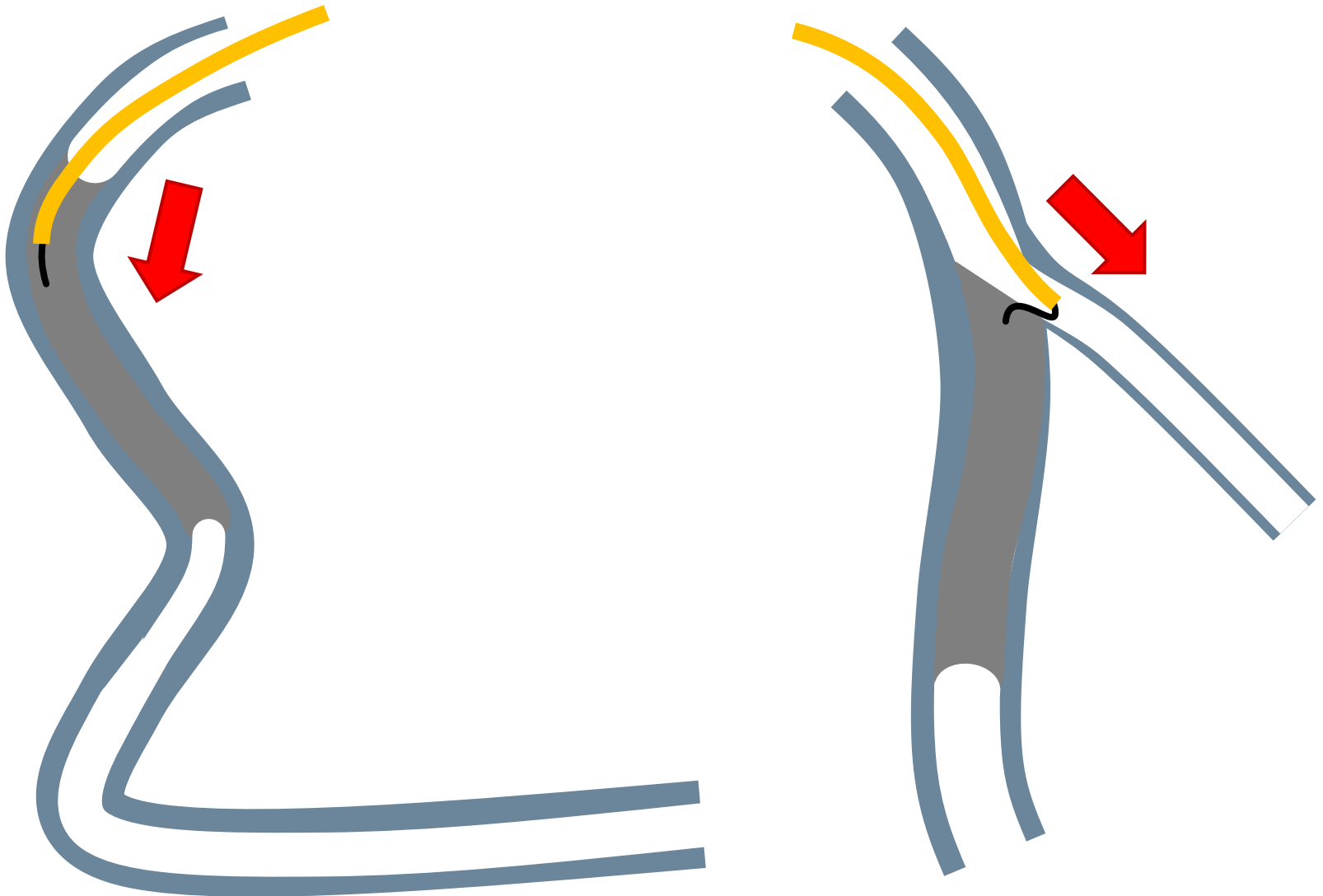
# Different situation, different MC



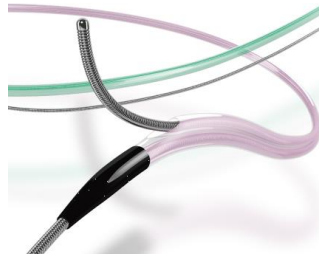
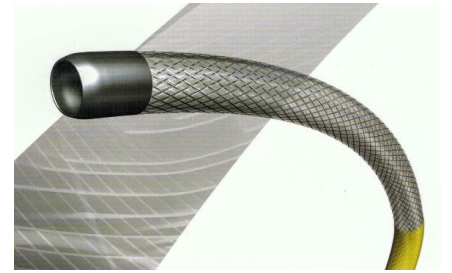
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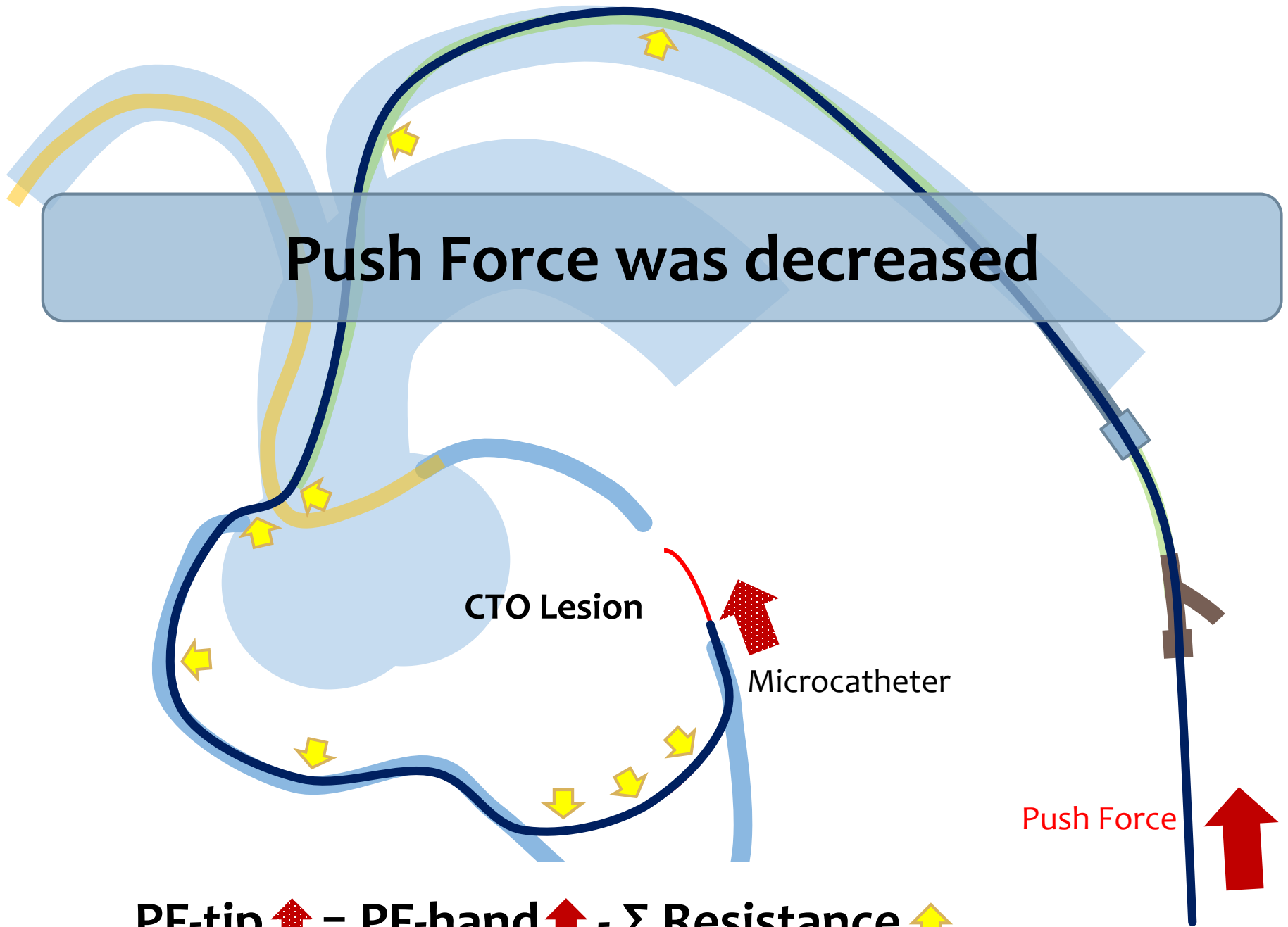
# For “Tip Flexibility”, you should touch.



# Selection of MC

- How to select MC ???
  - Each MC has different structure and strong point
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  - But some fundamental points are there.
    - Tip flexibility
    - **Resistance**
    - Compatibility with coil

**Push Force was decreased**



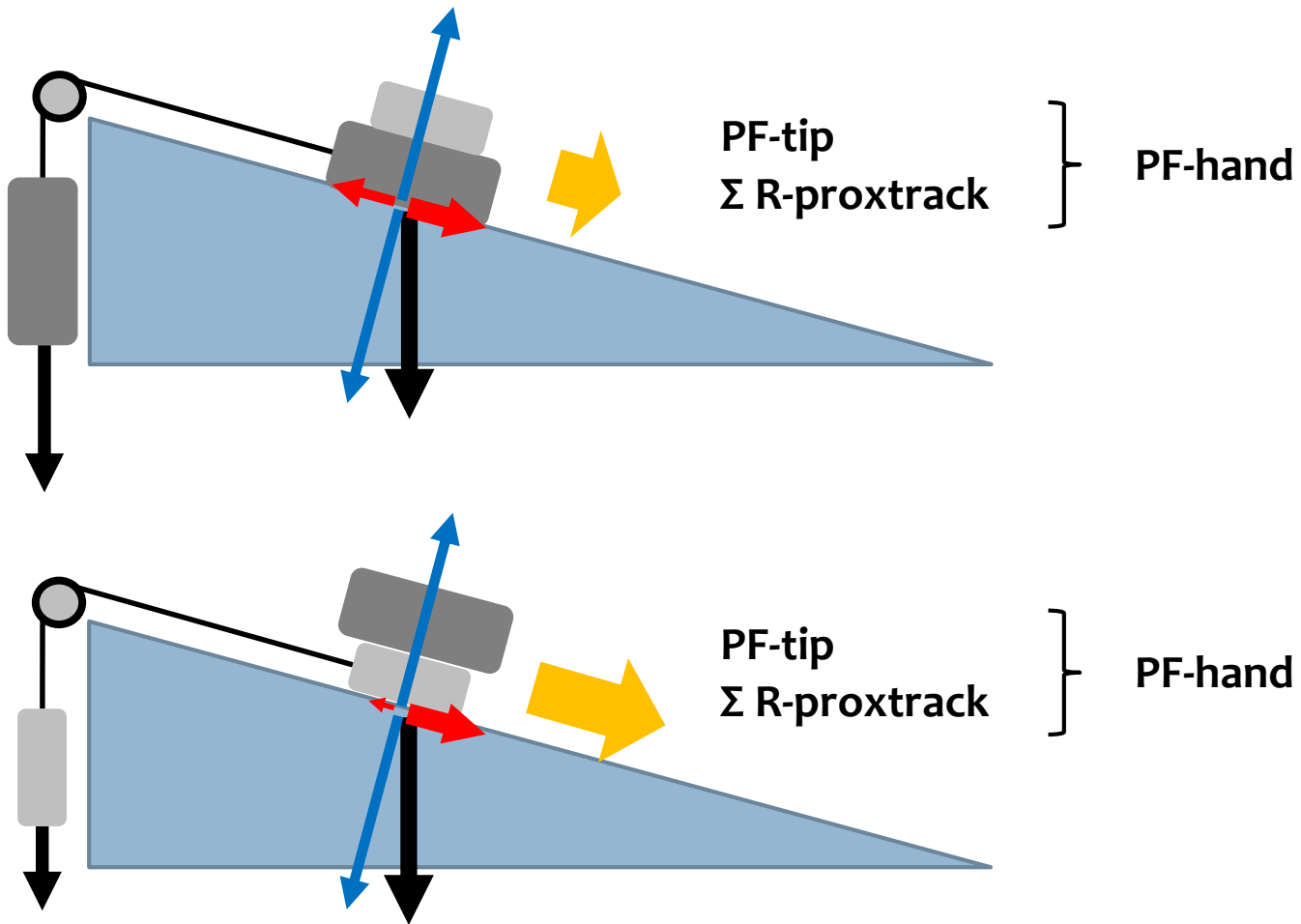
CTO Lesion

Microcatheter

Push Force

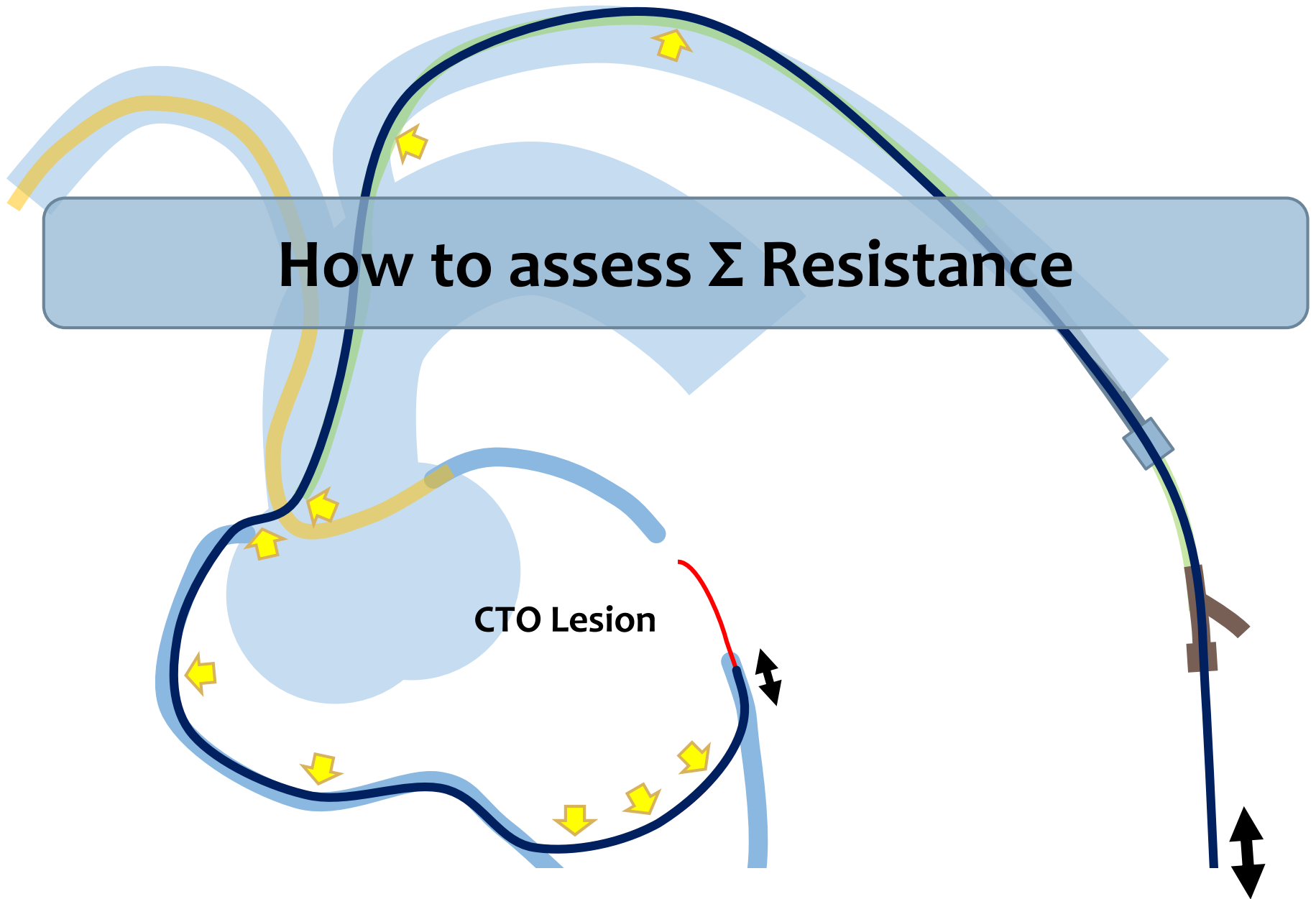
$$\text{PF-tip} \uparrow = \text{PF-hand} \uparrow - \Sigma \text{ Resistance} \uparrow$$

# Equilibrium & Force





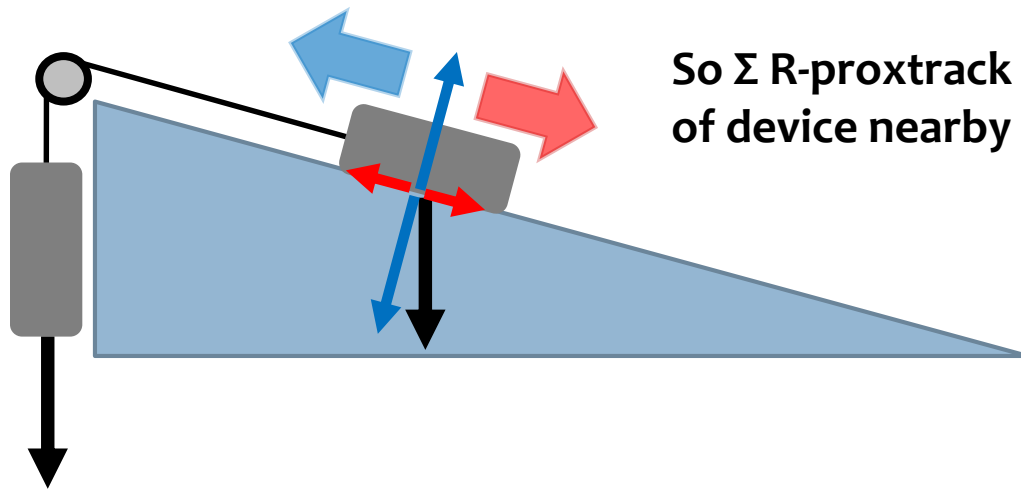
# How to assess $\Sigma$ Resistance



**Assess :**  $\Sigma$  Resistance = Resistance in distal true lumen  
with constant speed movement

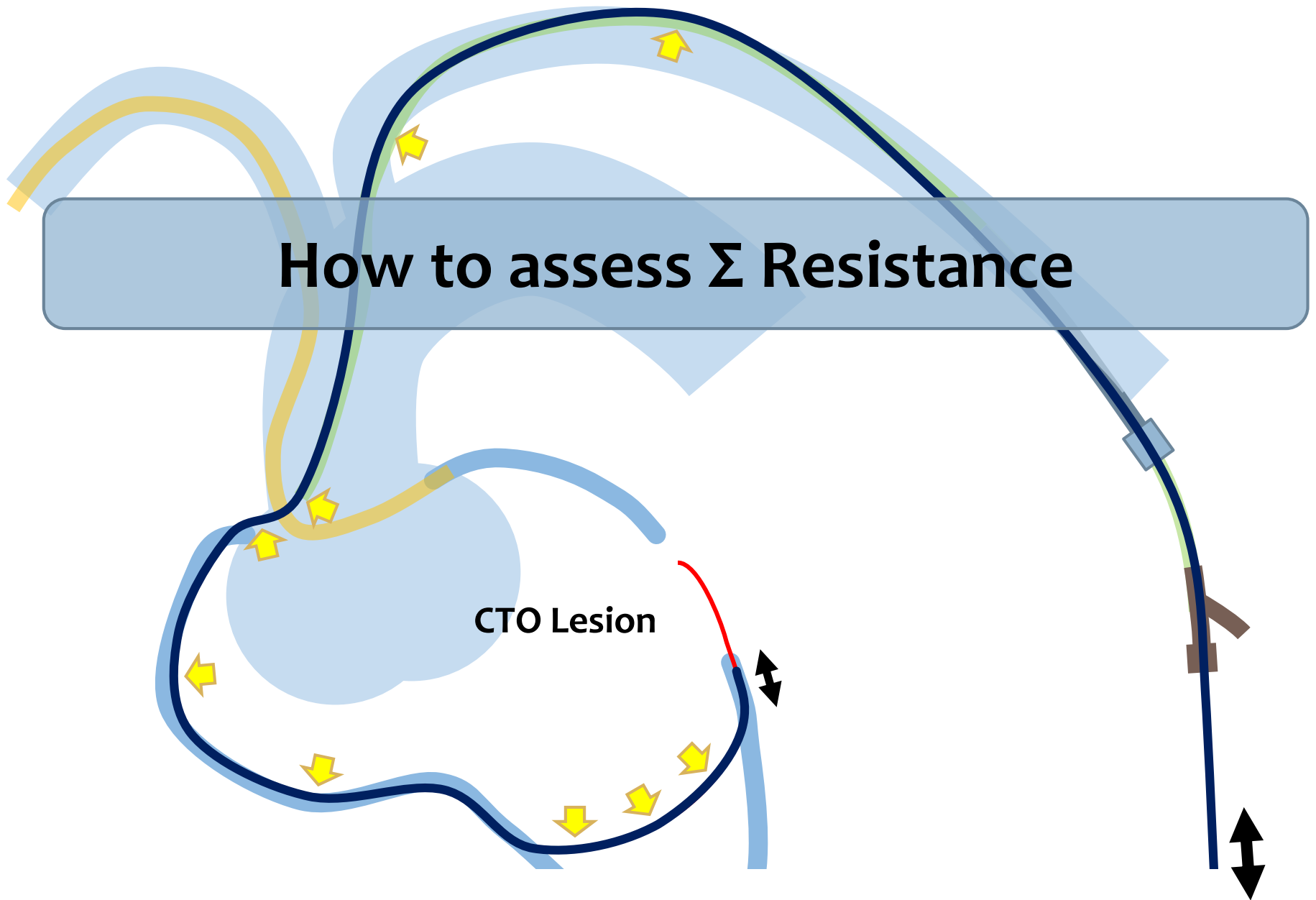
# Equilibrium & Force

In Equilibrium situation,  
Object is fixed or move with constant speed.



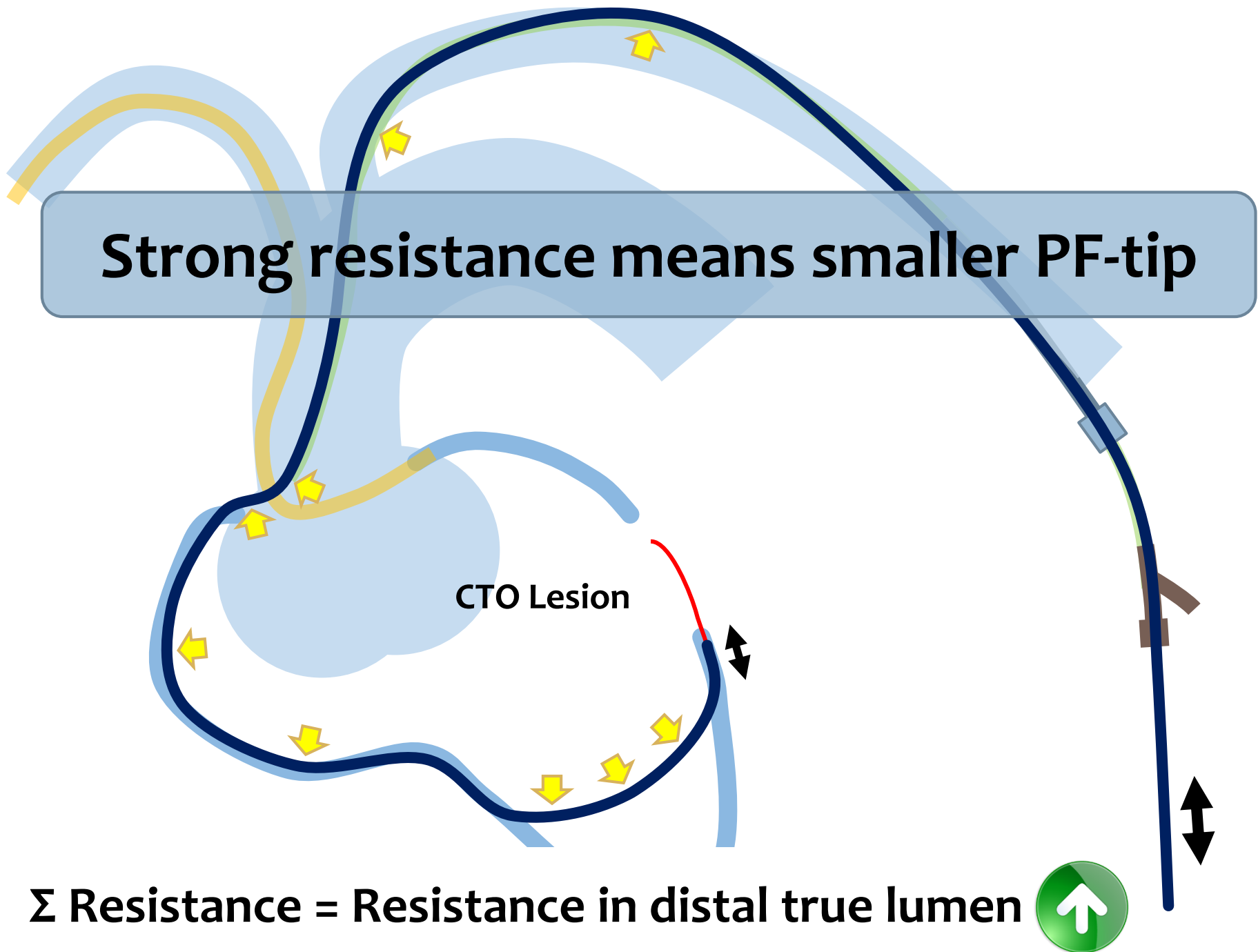
So  $\Sigma R$ -proxtrack = PF makes constant movement  
of device nearby target site.

# How to assess $\Sigma$ Resistance



**Assess :**  $\Sigma$  Resistance = Resistance in distal true lumen  
with constant speed movement

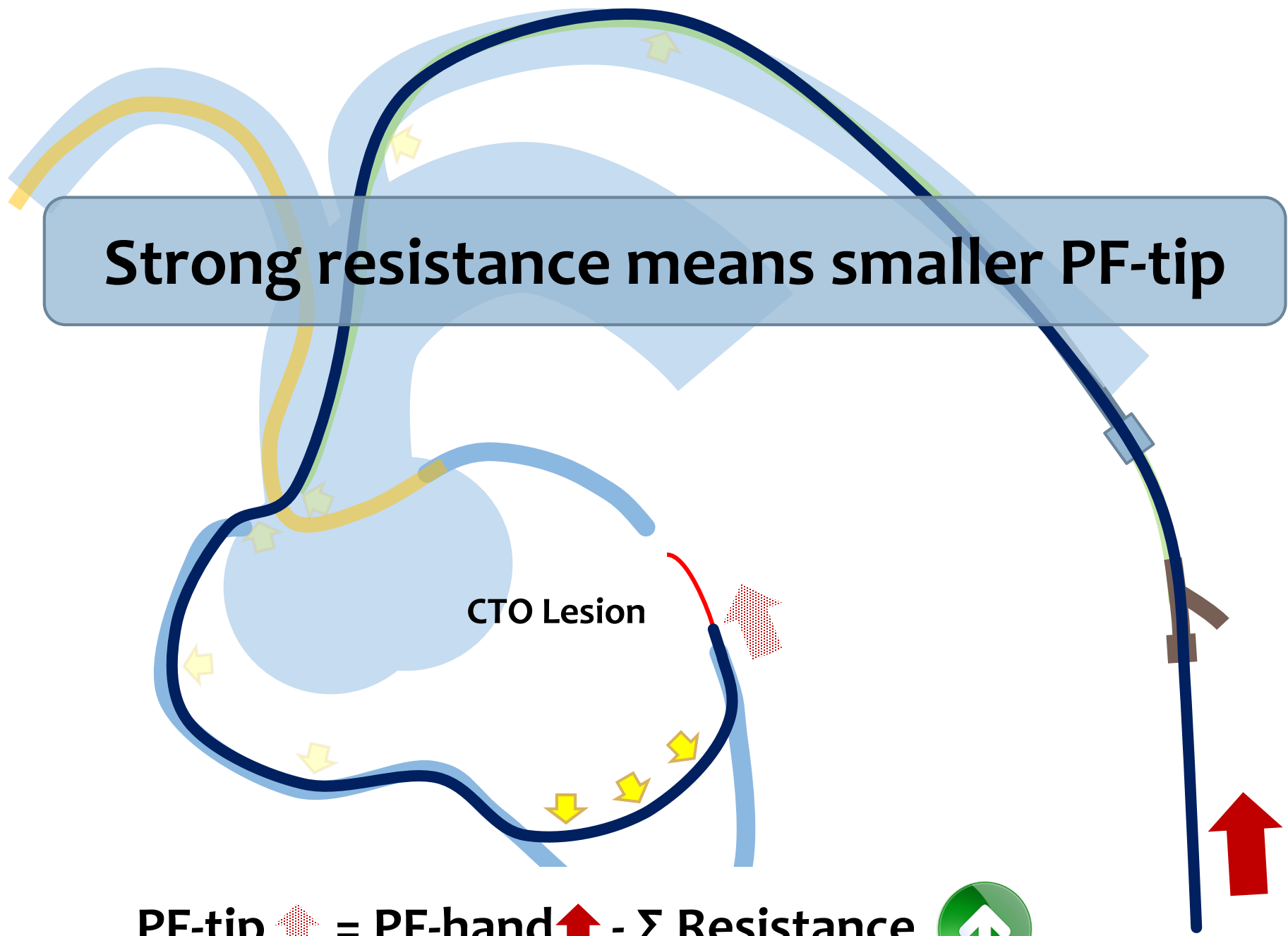
**Strong resistance means smaller PF-tip**



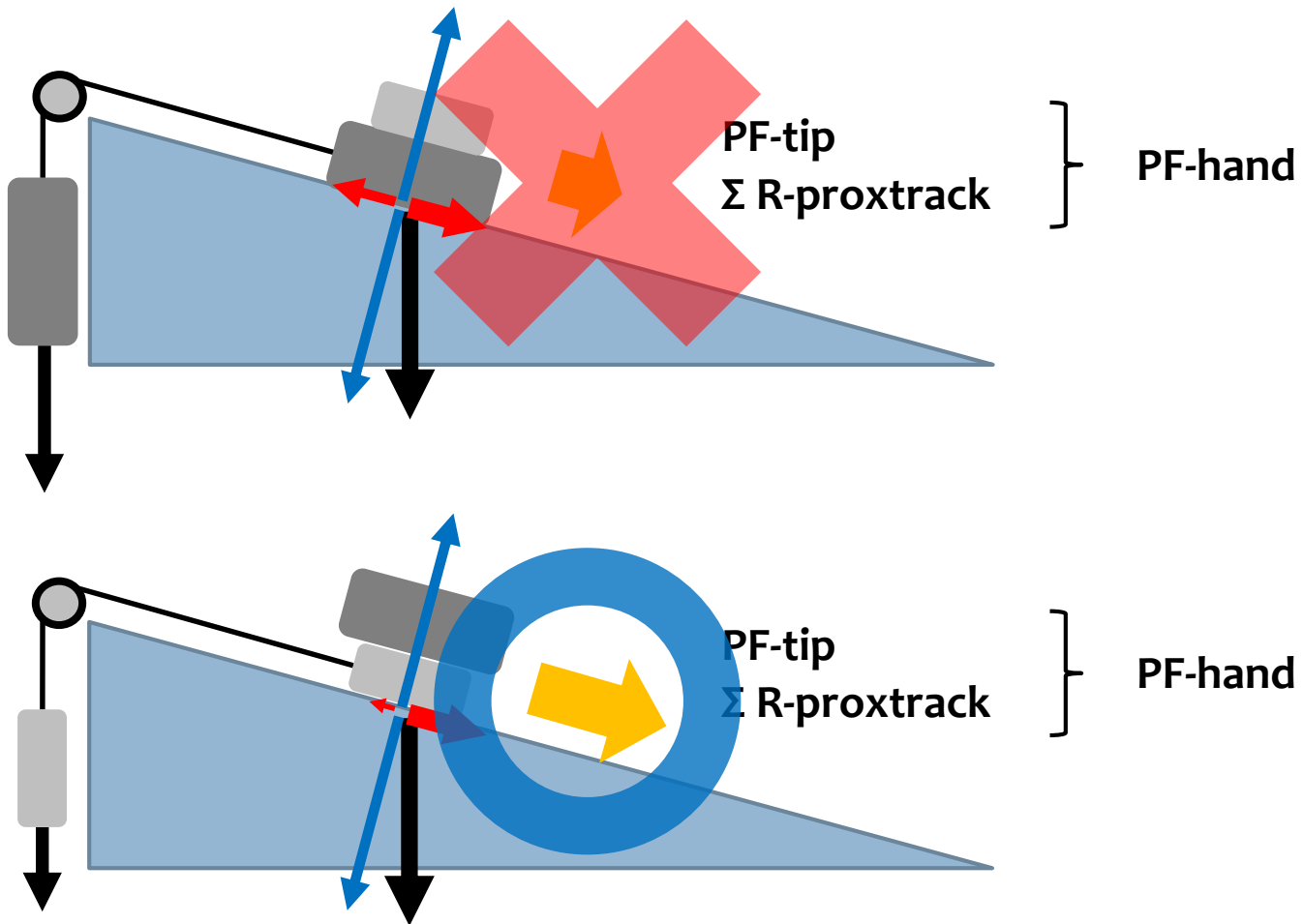
**Strong resistance means smaller PF-tip**

CTO Lesion

PF-tip  = PF-hand  -  $\Sigma$  Resistance



# Equilibrium & Force



Consider to change MC

CTO Lesion

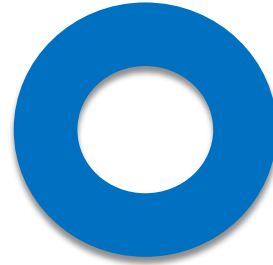
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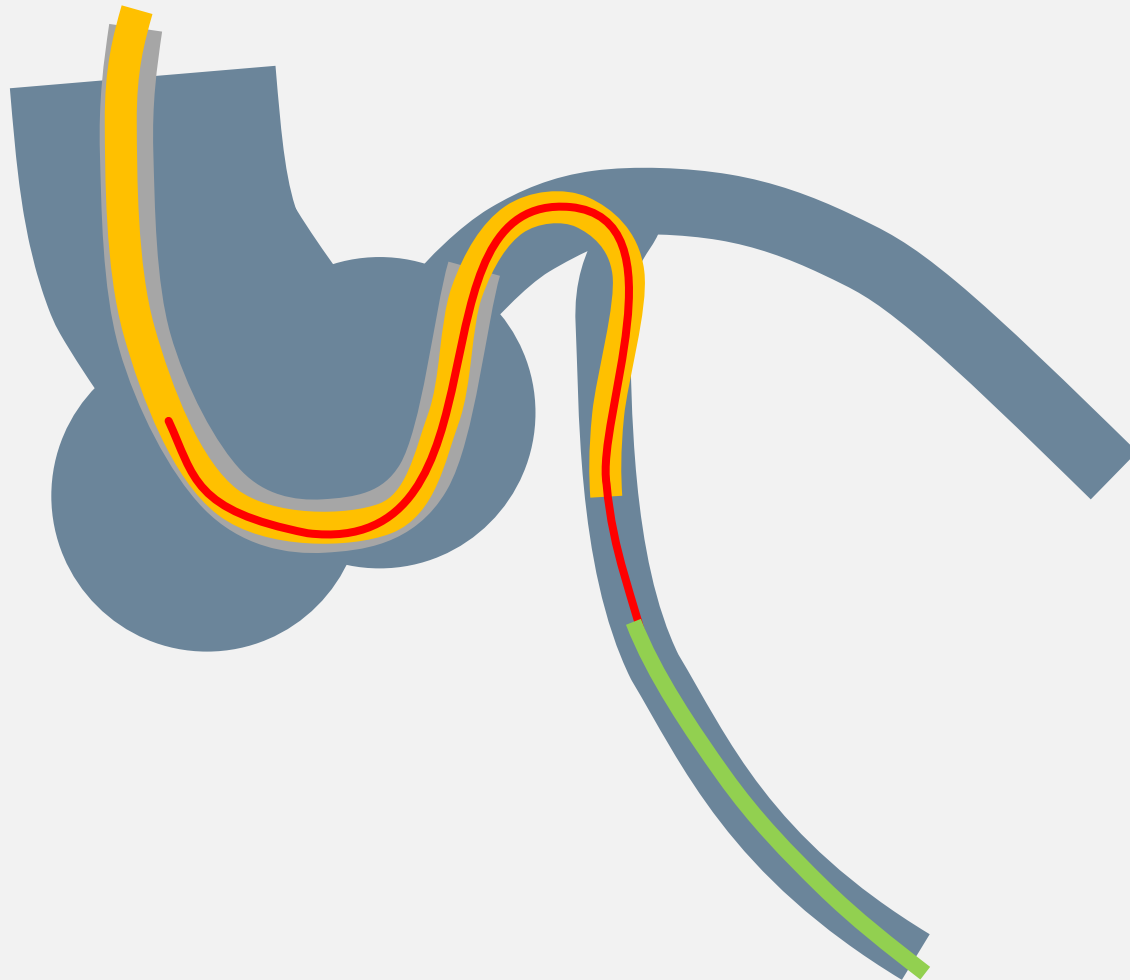
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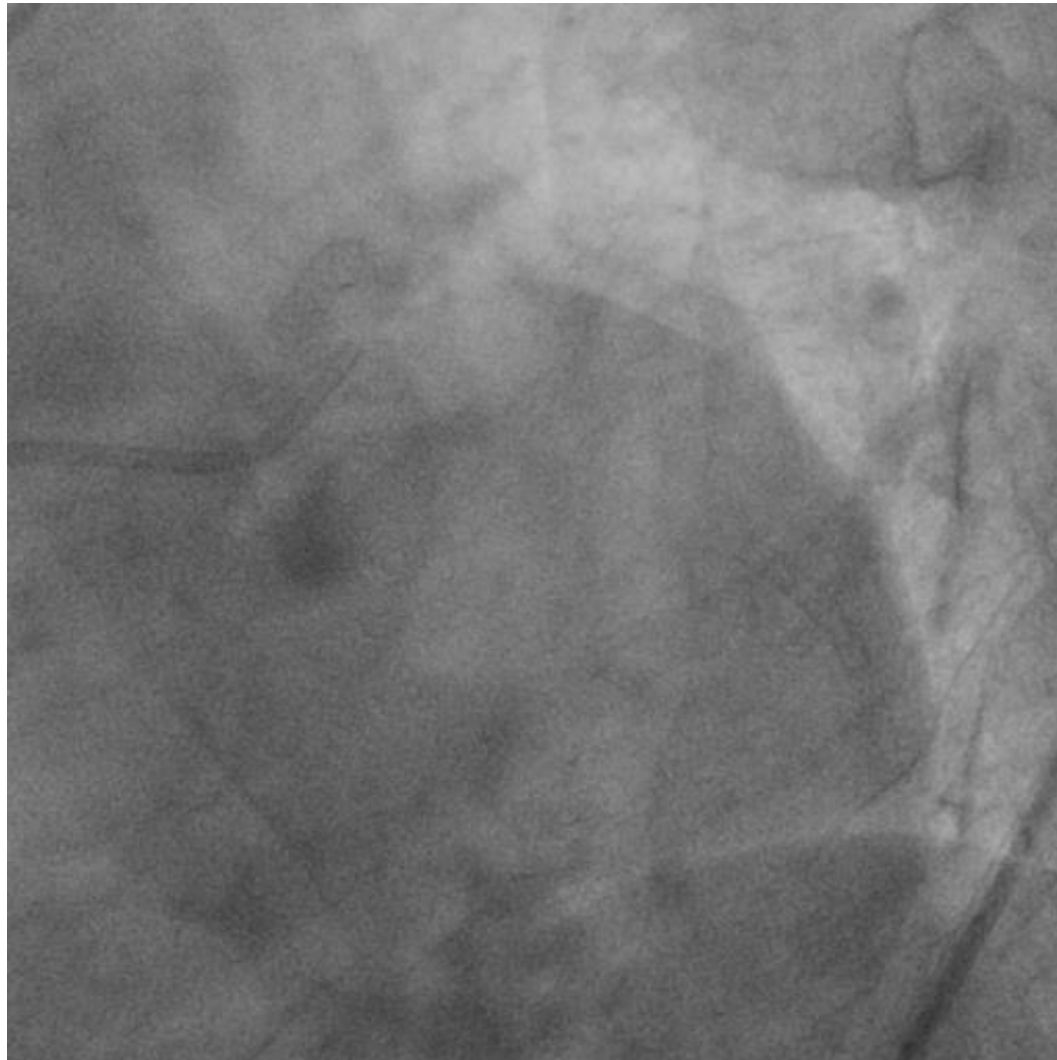
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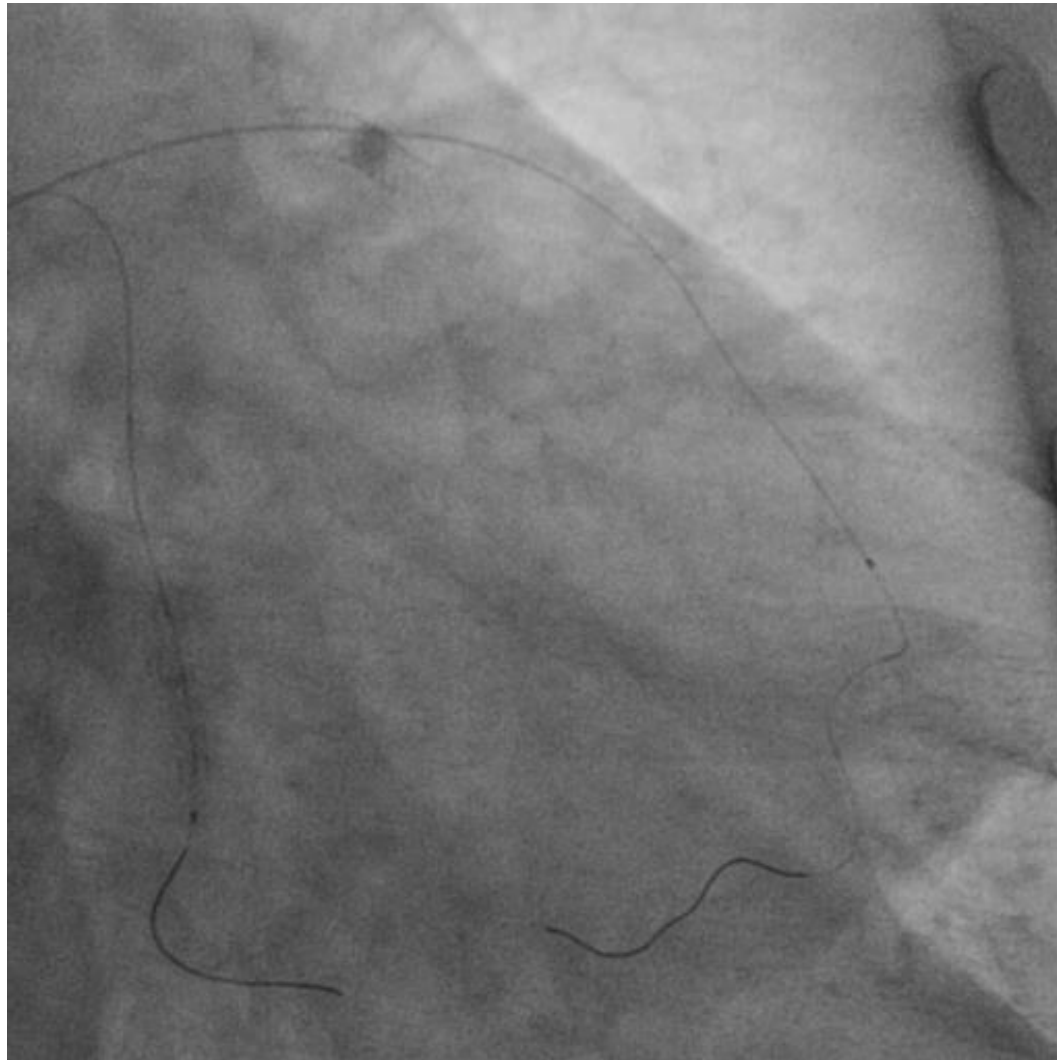
# Guide-Extension to Pickup GW



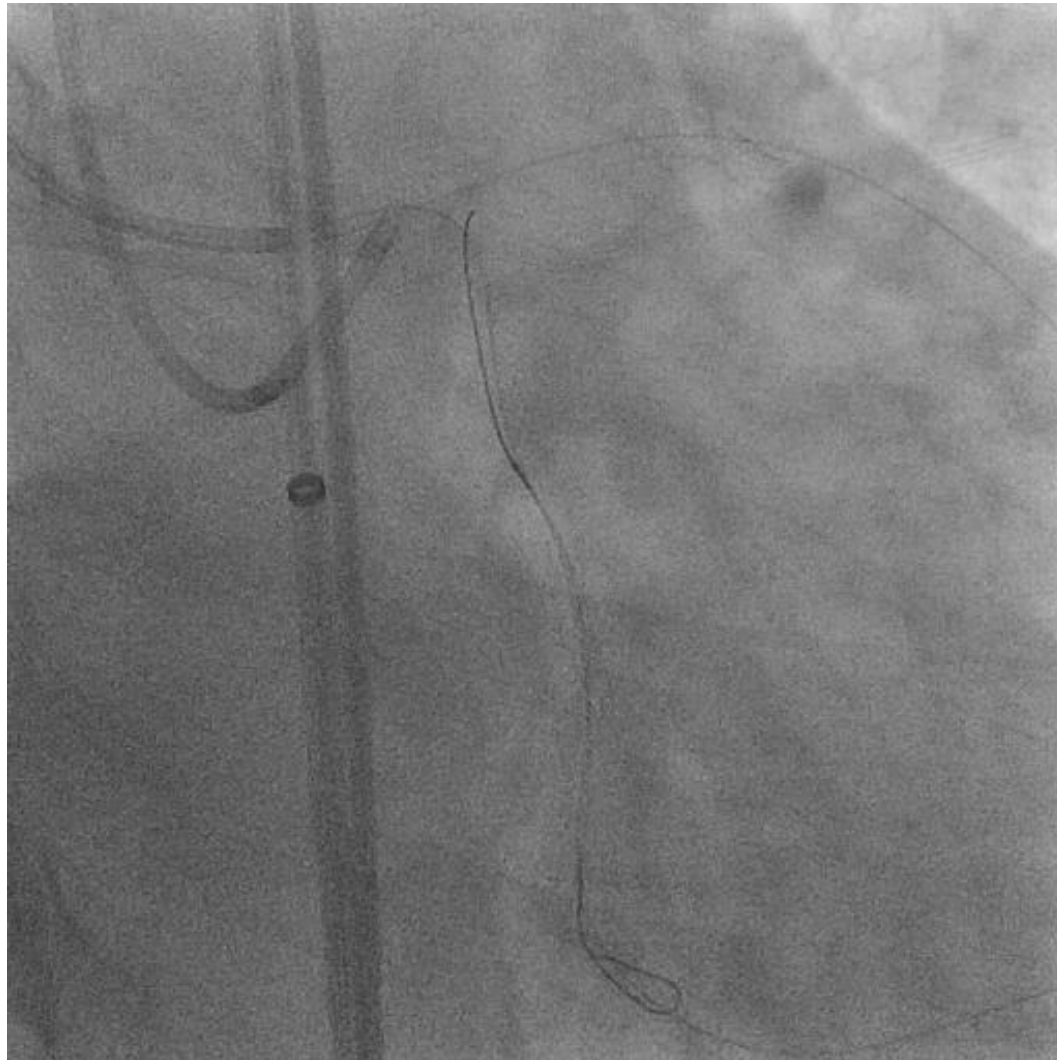
# Pickup Technique @proximal



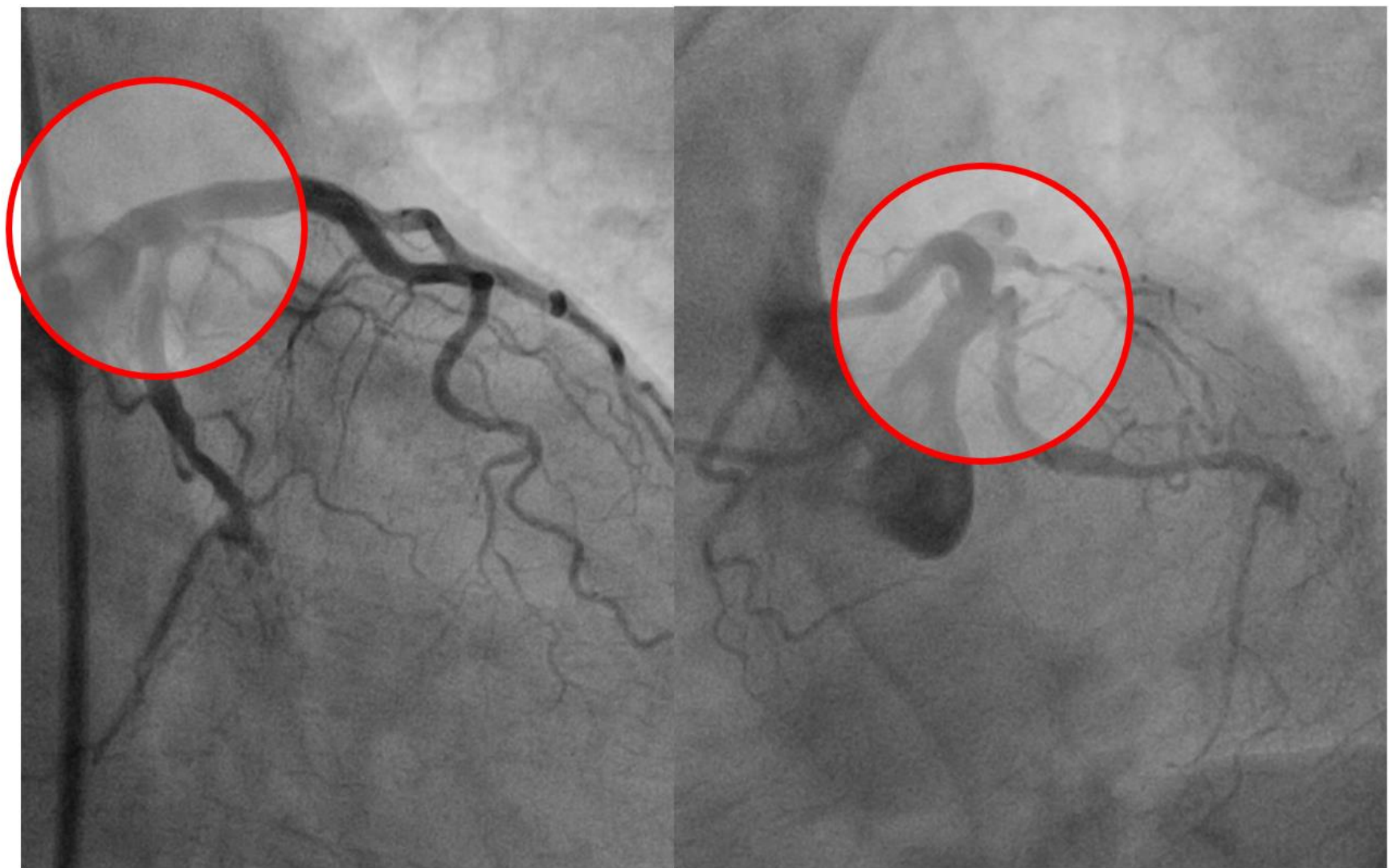
# Channel Tracking using SUOH



# Pickup Technique @proximal

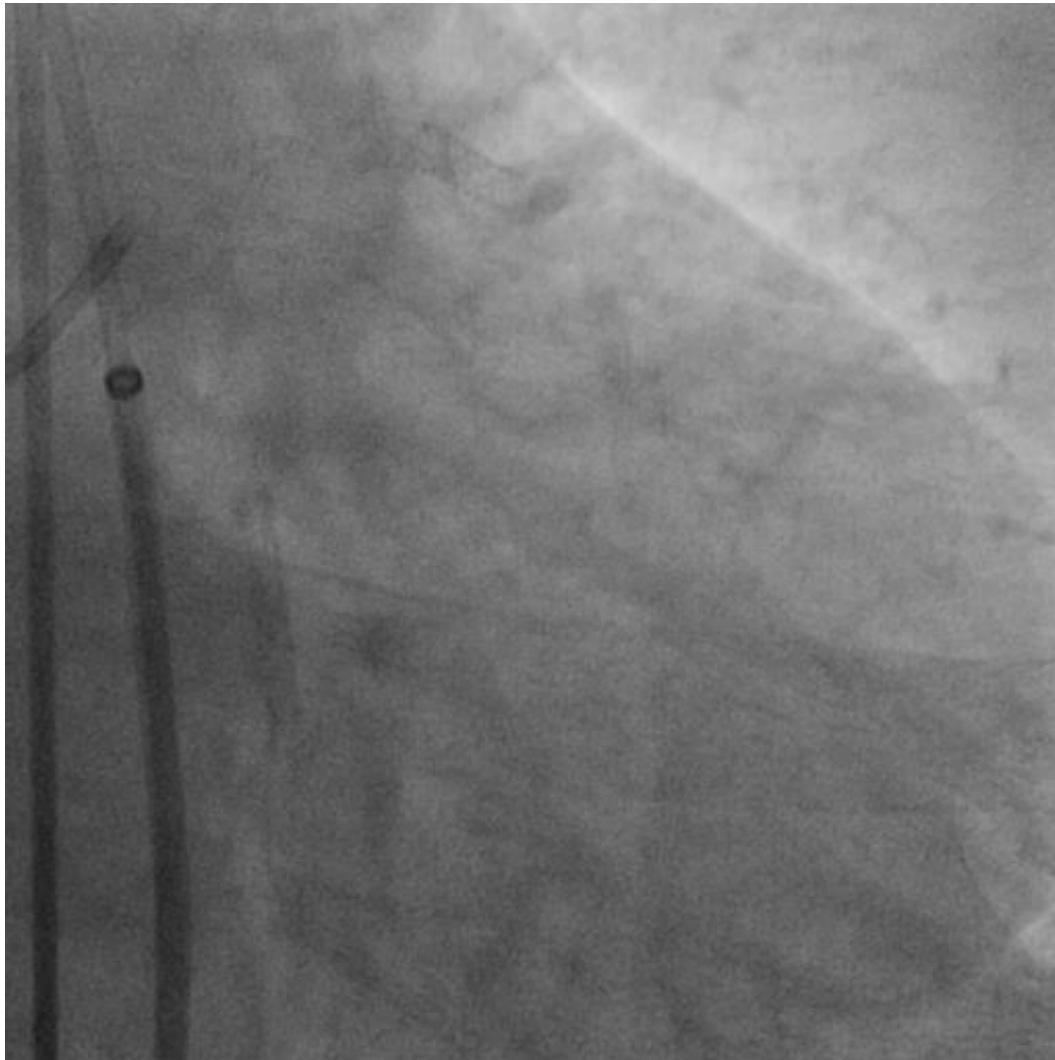


# Wire couldn't be advanced LM

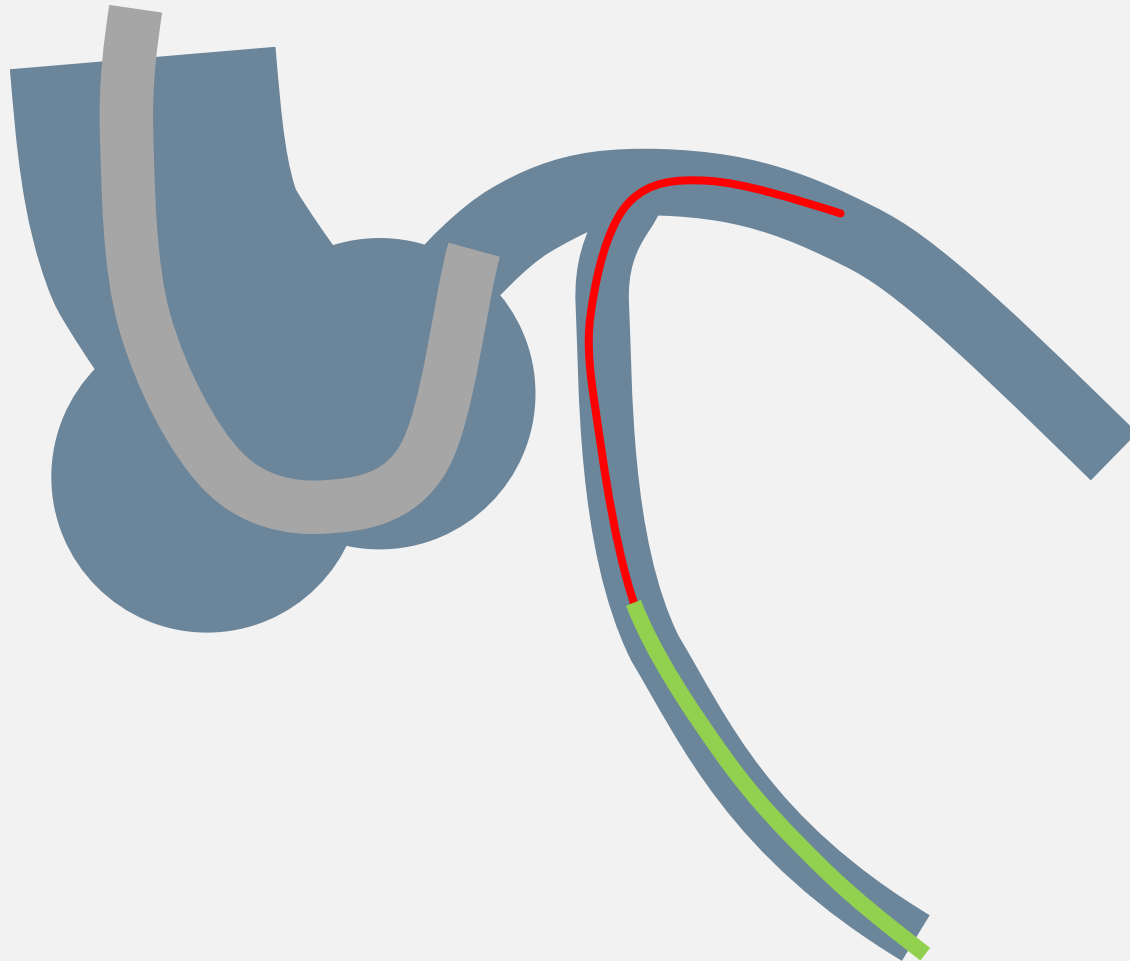




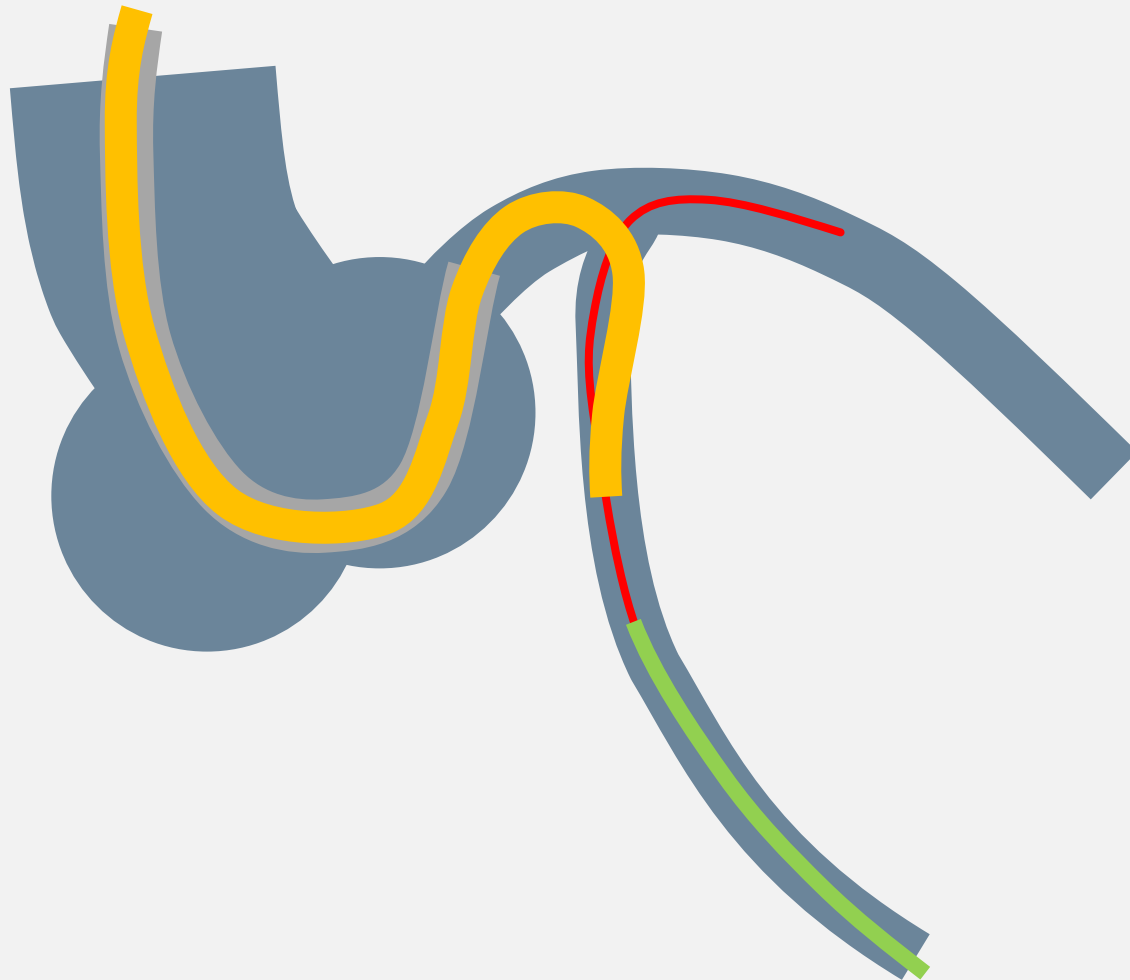
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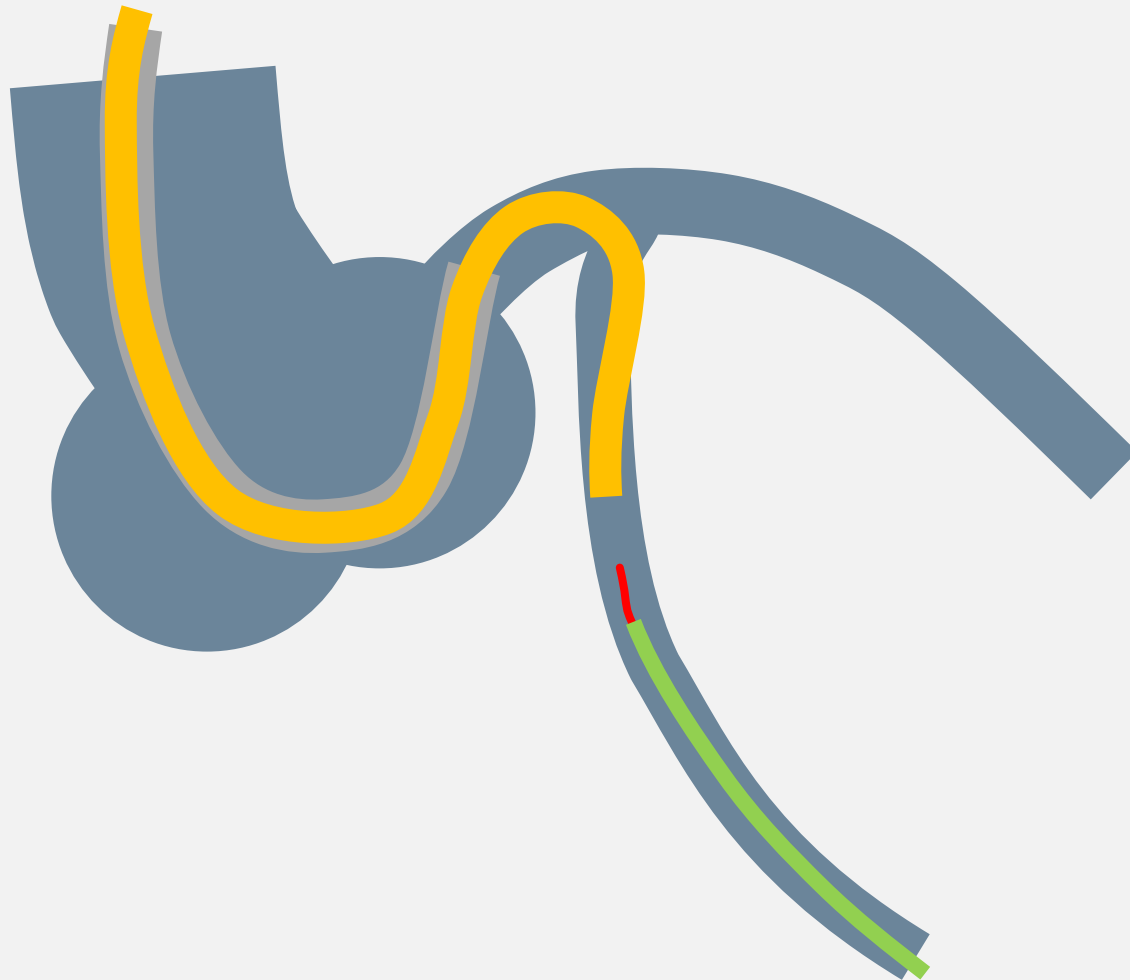
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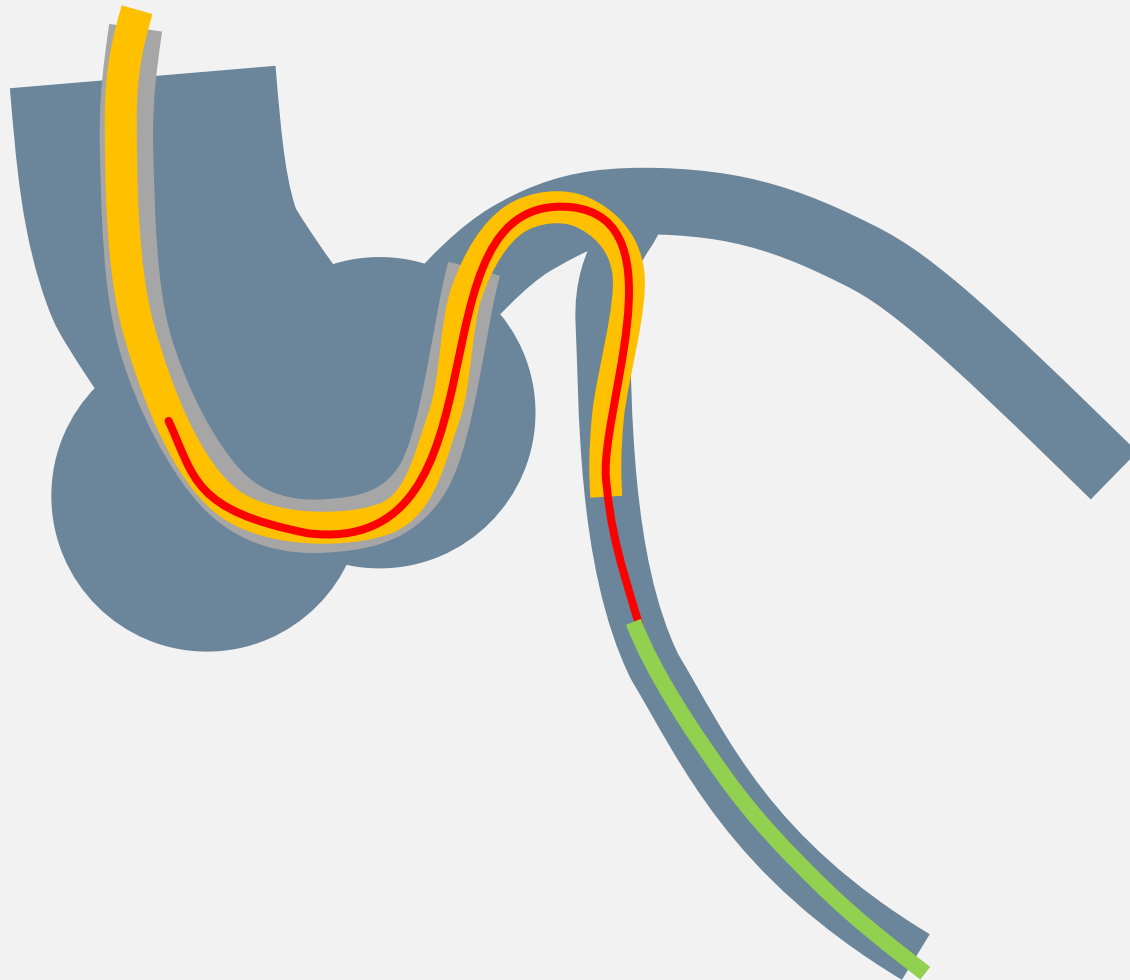
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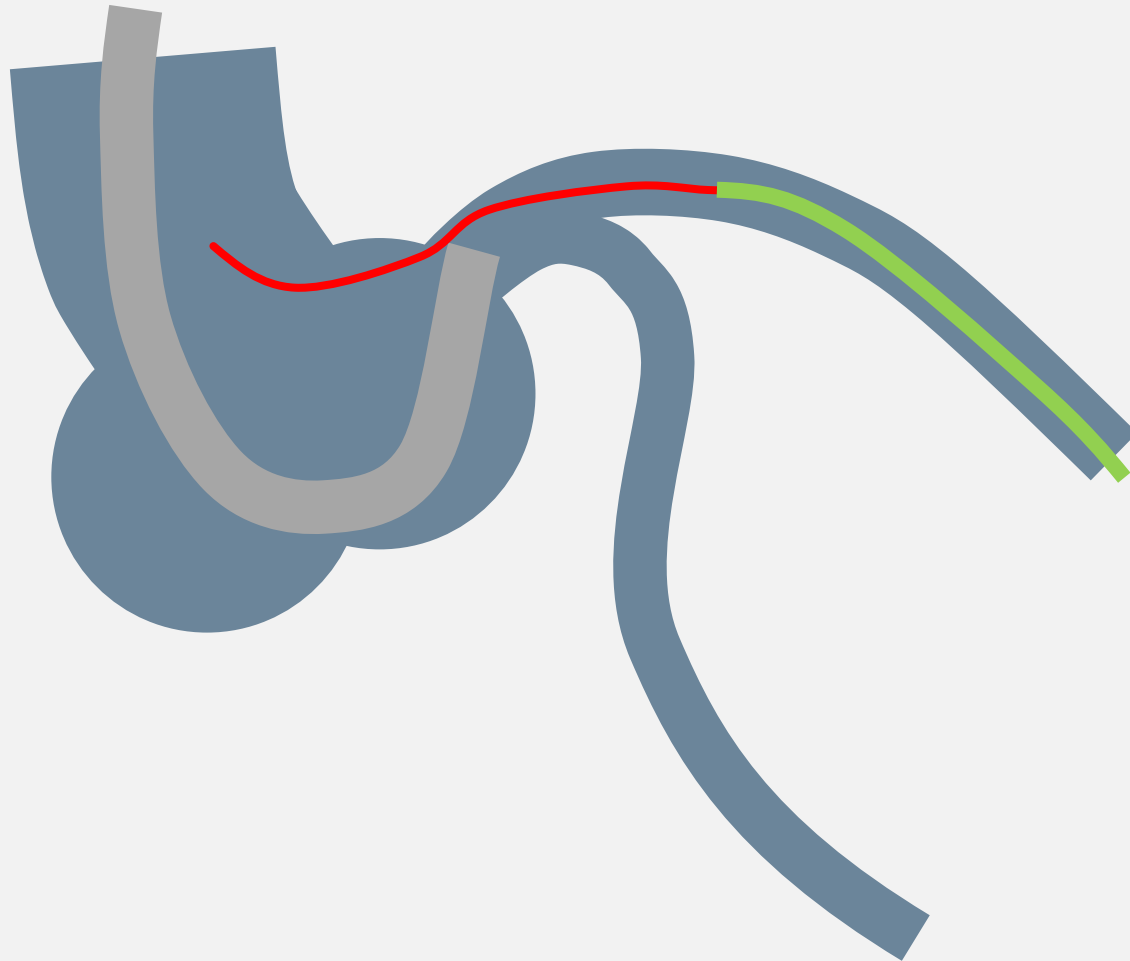
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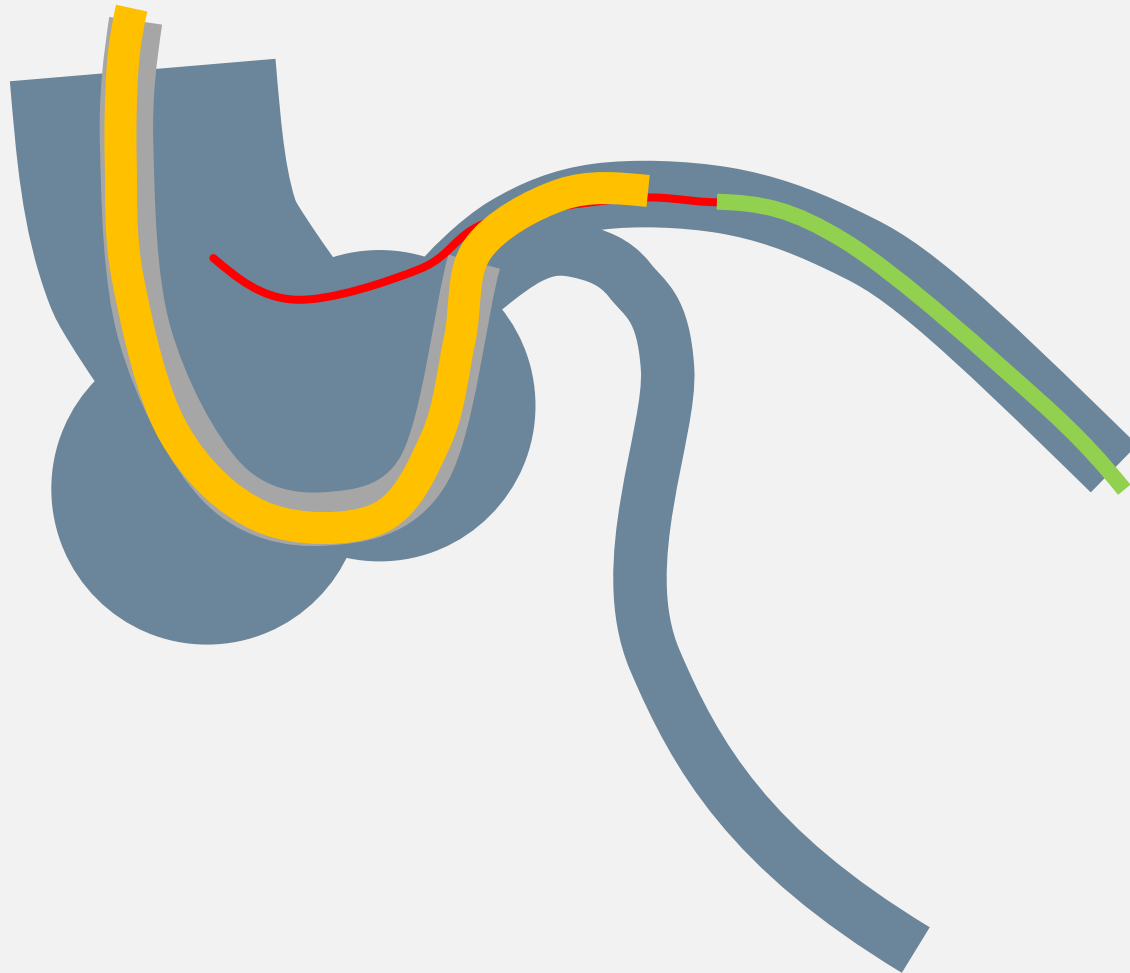
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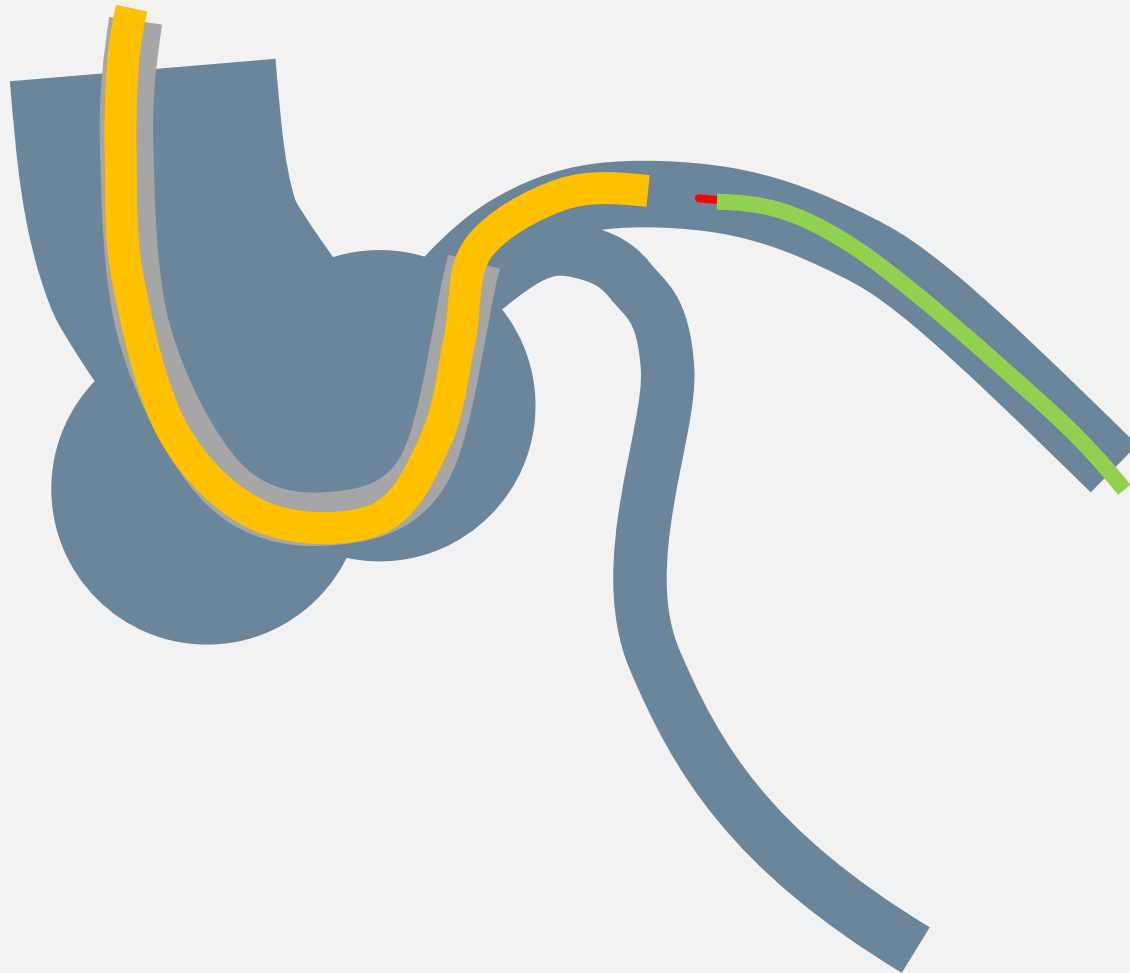
# Pickup Technique @proximal



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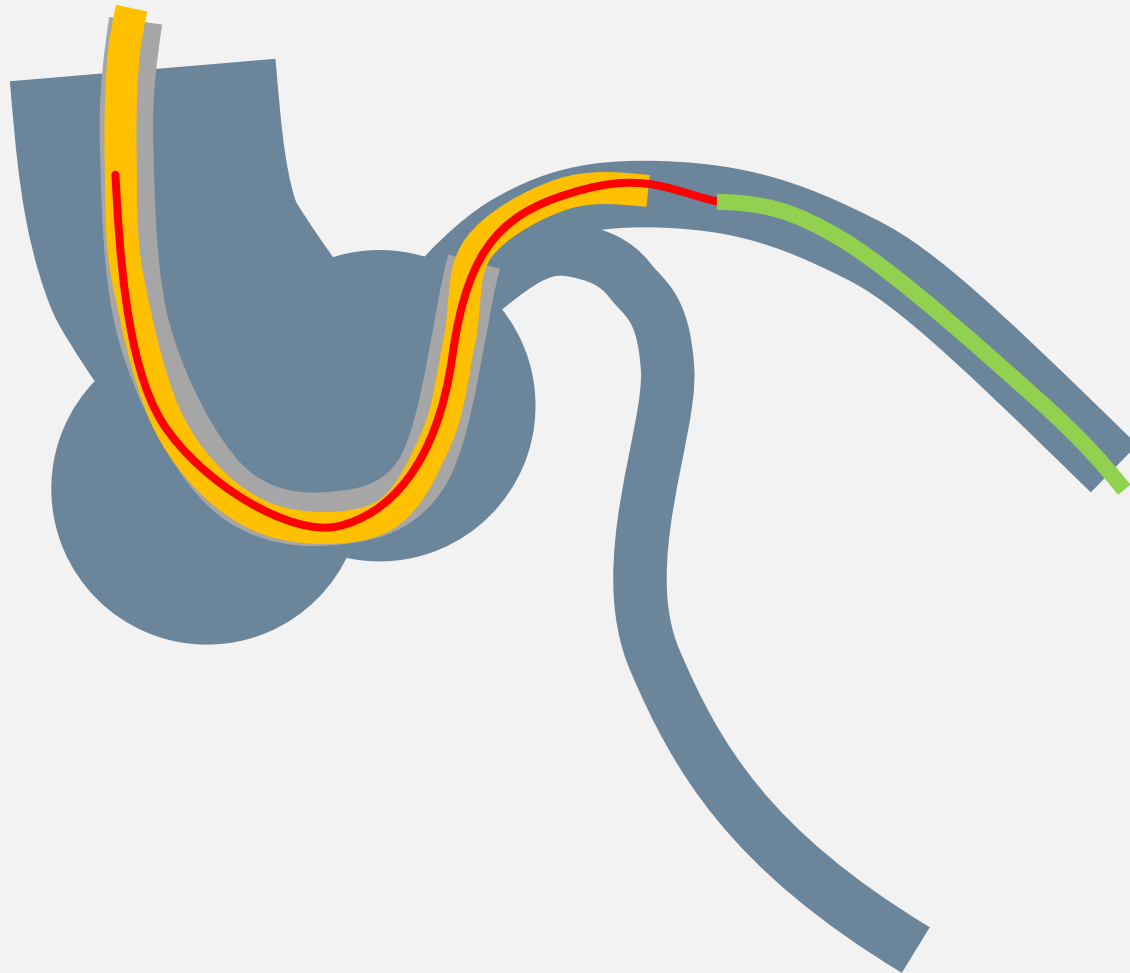


# Pickup Technique @proximal

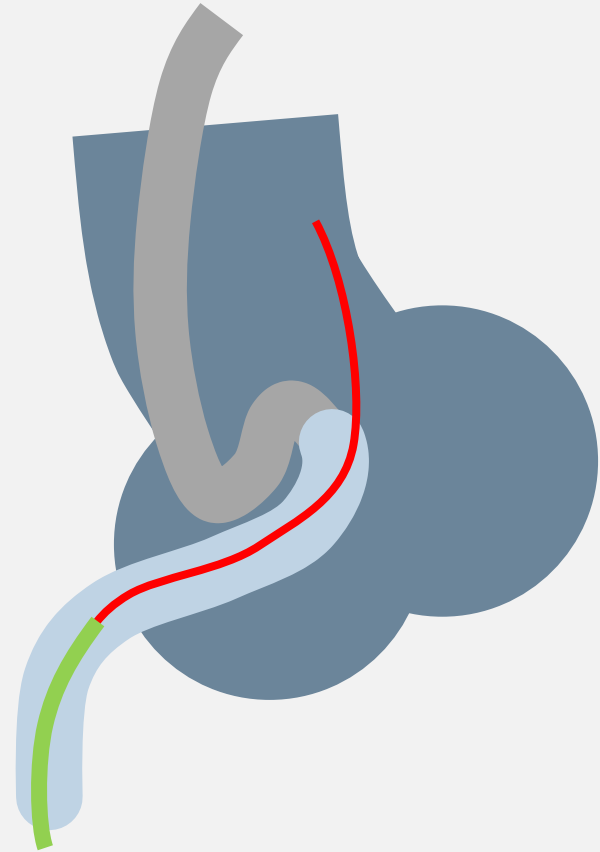
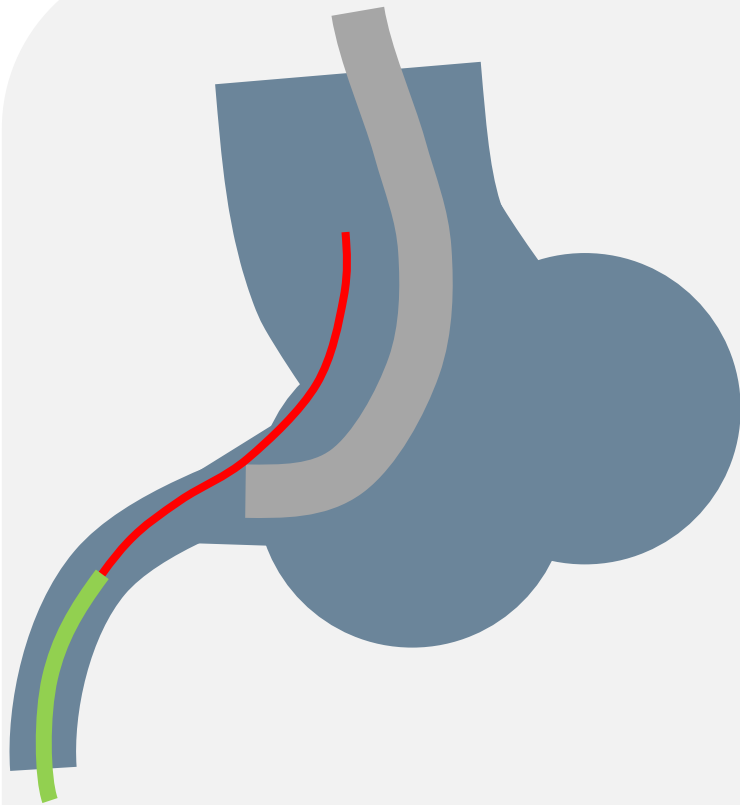




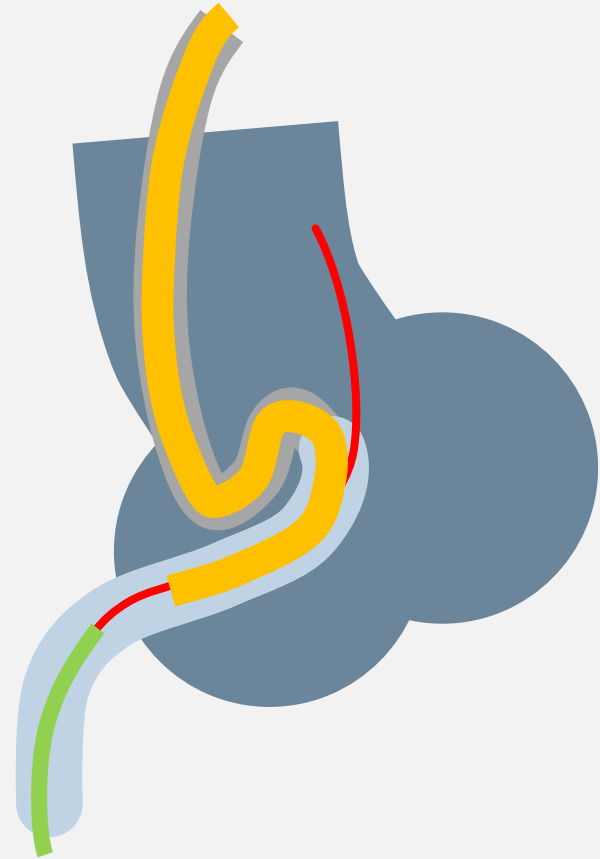
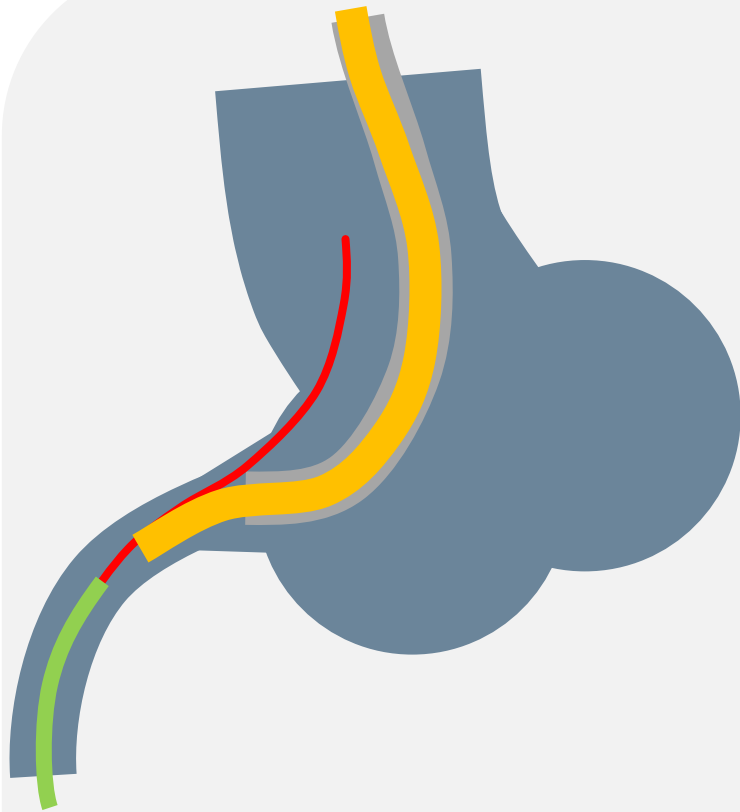
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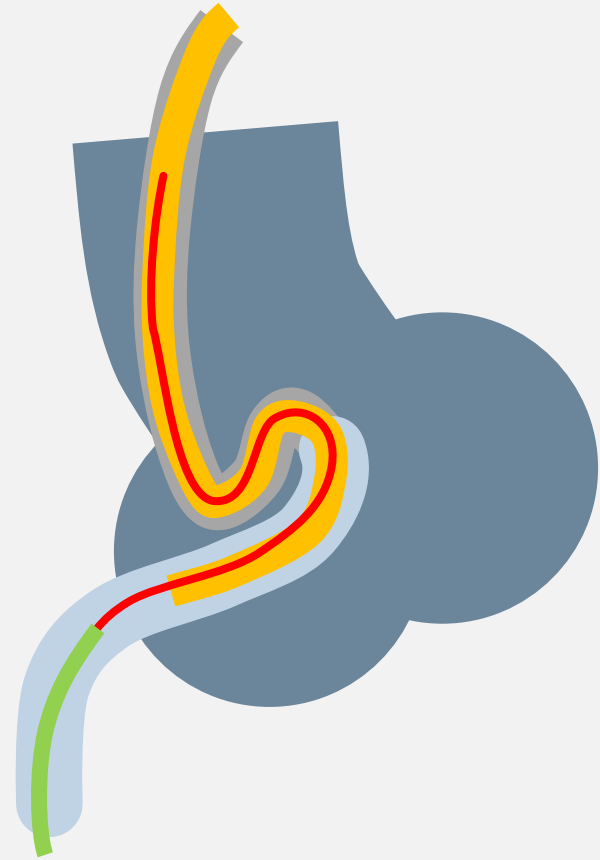
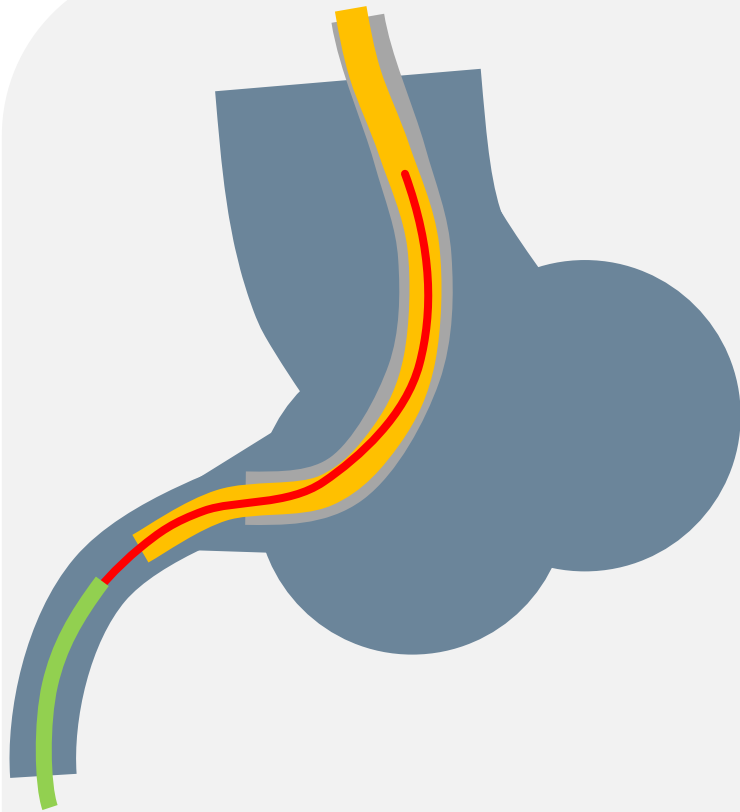
# Pickup Technique @proximal



# Pickup Technique @proximal



# Pickup Technique @proximal



# Pickup Technique @TO



# Pickup Technique @TO



# Pickup Technique @TO



# Pickup Technique @TO

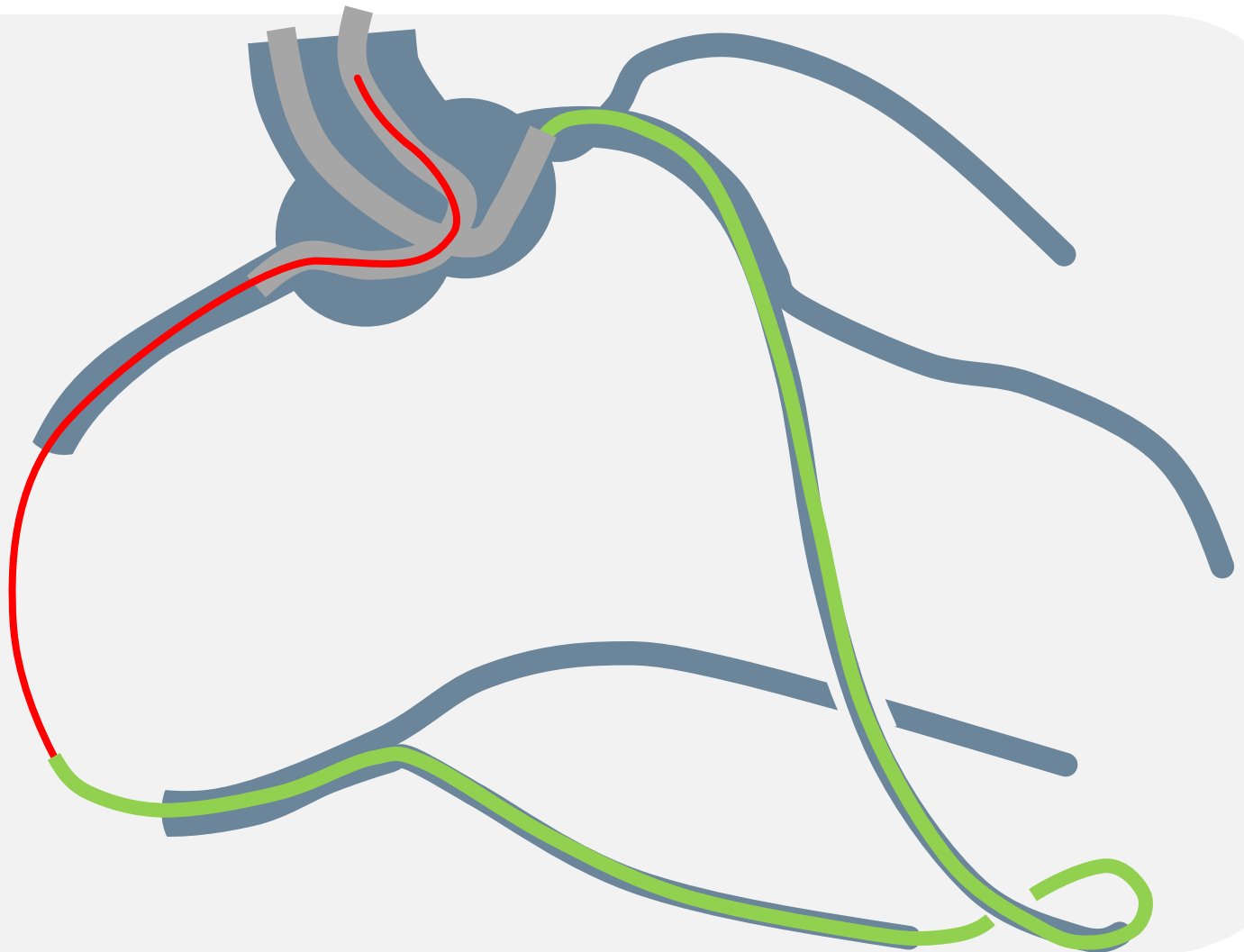




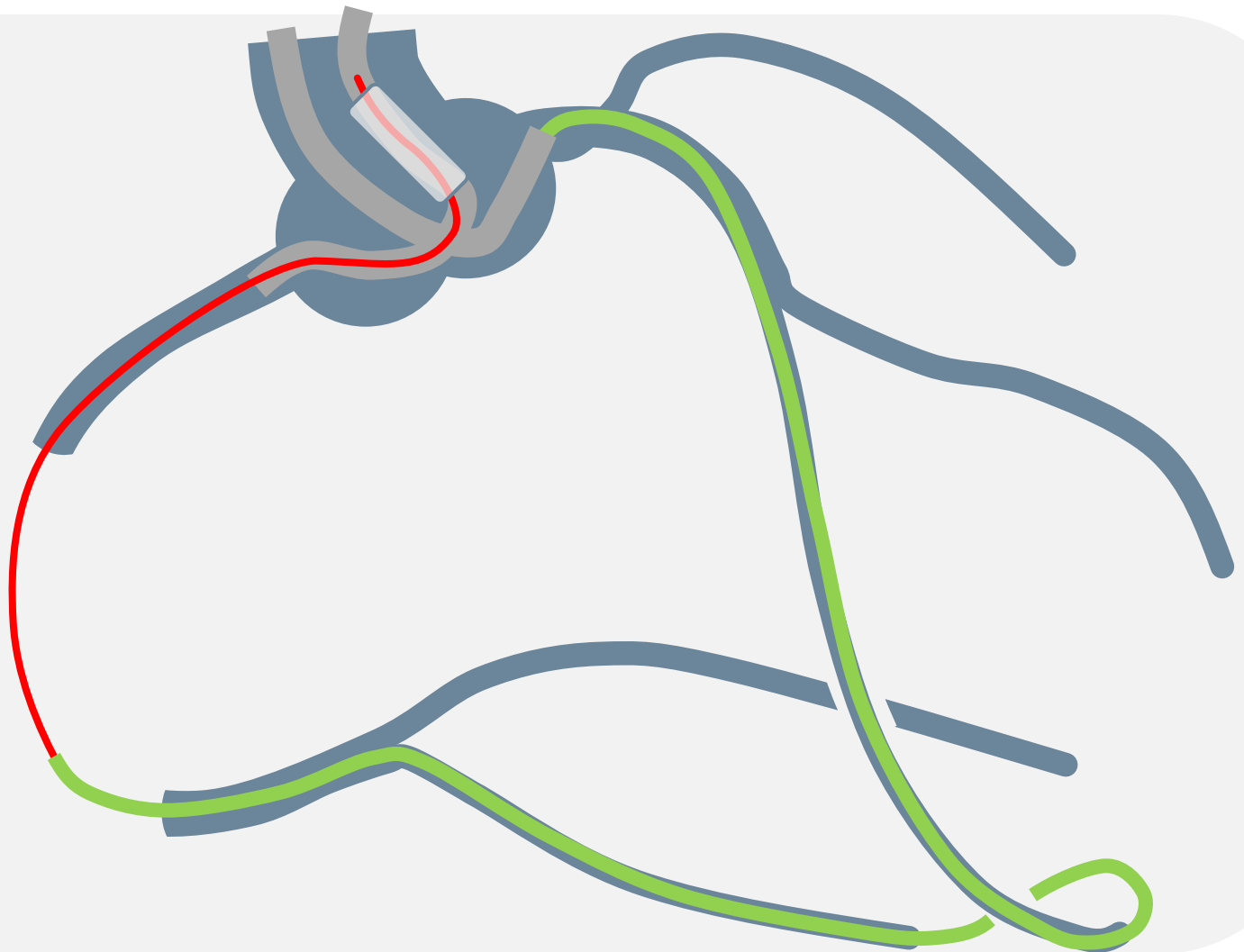
# Pickup Technique @TO



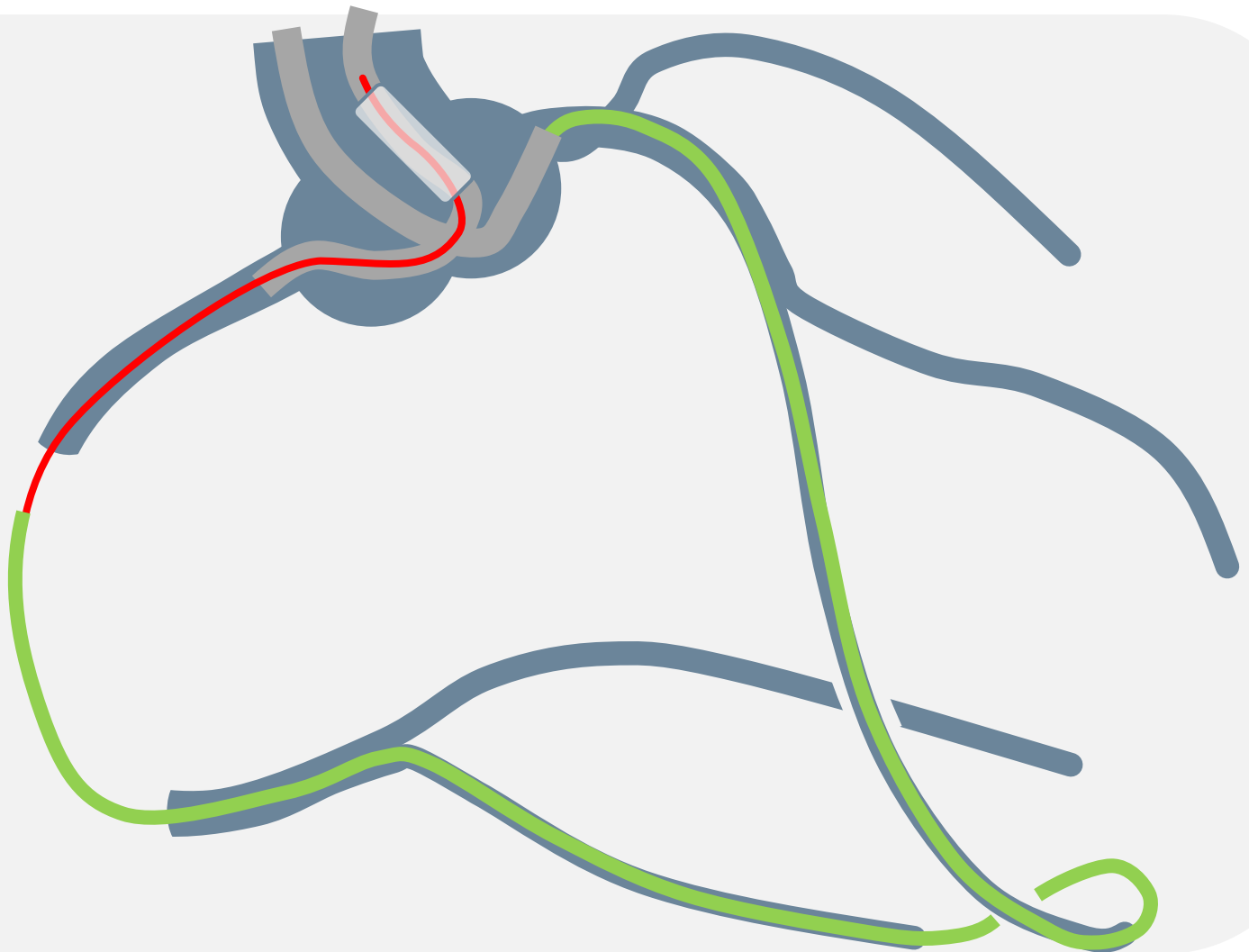
# Pickup Technique @long route



# Pickup Technique @long route



# Pickup Technique @long route



# Pickup Technique @long route



# Pickup Technique @long route



# Pickup Technique @long route



# Summary

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- In the presentation, I showed how/when to use Microcatheter and Guide-Extension, and how to select Microcatheter.
- For Microcatheter selection, I recommend to check/assess by yourself with understand those advantage and disadvantage.
- For Guide-Extension, understandings how to use it in CTO-PCI improve your procedure.
- I hope that you will use them properly and get more success in CTO-PCI.