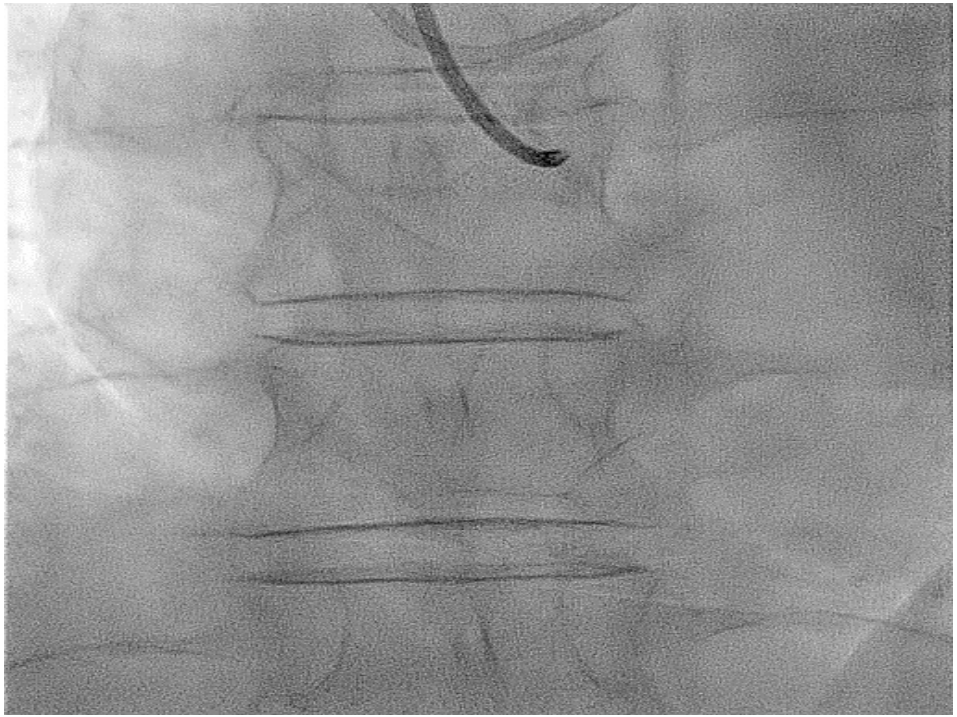
PERCUTANE BEHANDELING VAN CHRONISCHE TOTALE CORONAIRE OCCLUSIES (CTO)

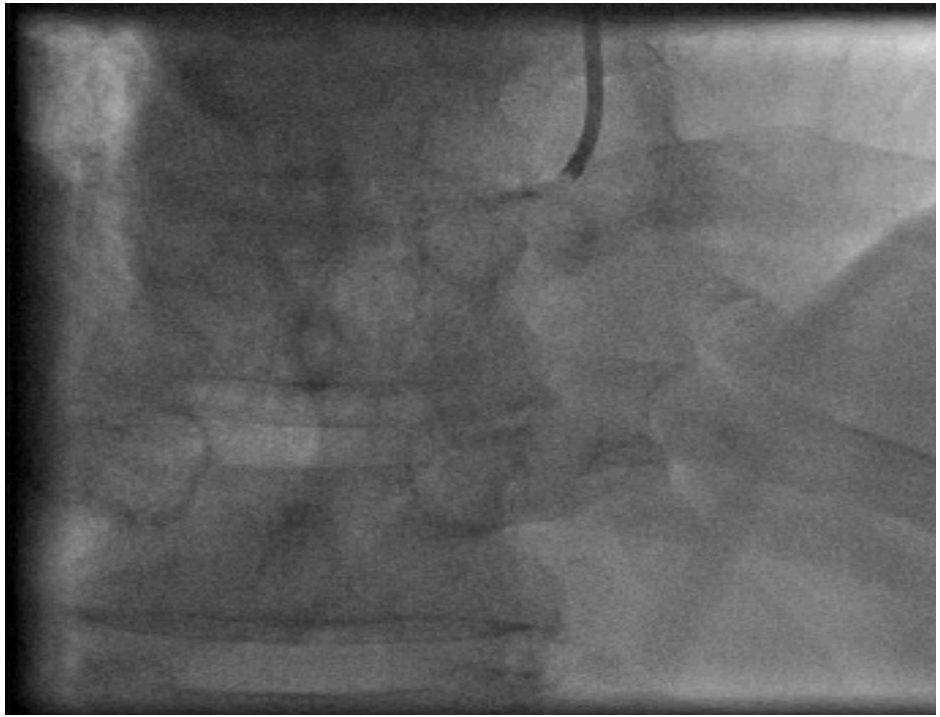
Jan-Peter van Kuijk

Interventiecardioloog

St Antonius

Chronische totale occlusie?





CHRONISCHE TOTALE OCCLUSIE - DEFINITIE

CTO definitie:

- 100% occlusie van een coronair arterie (TIMI flow 0)
- Gedurende minimaal 3mnd (obv angiografisch bewijs)

Functionele CTO:

- <100% occlusie, TIMI I flow
- Gedurende minimaal 3mnd

CHRONISCHE TOTALE OCCLUSIE

Waar doen we het voor?

Primaire doel van behandeling is gericht op vermindering van angina pectoris

→ EURO-CTO en OPEN-CTO trials positief effect[1,2]

→ DECISION-CTO geen effect[3]

→ SHINE-CTO (Sham controlled intervention to improve QoL)[4]

Secundaire eindpunten: LV functie, mortaliteit

→ tot op heden geen eenduidig bewijs

1. Werner et al. Eur Heart J 2018;39:2484
2. Sapontis et al. JACC Cardiovasc Int 2017;10:1523
3. Lee SW et al. DECISION CTO trial. Circulation 2019; 139:1674
4. Clinicaltrials.gov NCT02784418

CHRONISCHE TOTALE OCCLUSIE

2018 ESC / EACTS Guidelines on Myocardial Revascularization[1]

→ Class IIa/LoE B recommendation

PCI of CTOs should be considered in pts with angina resistant to medical therapy or with large area of documented ischemia in the territory of the occluded vessel.

2019 Global Expert Consensus Document[2]

→ CTO-PCI may improve hard outcomes, especially in patients with large ischemic burden (>10% of the myocardium) in whom complete revascularization is achieved

→ ongoing ISCHEMIA-CTO Trial and the NOBLE-CTO study.[3,4]

1. Neumann et al. 2018 ESC/EACTS guidelines on myocardial revascularization, Eur Heart J 2019
2. Brilakis et al, Circulation 2019
3. Clinicaltrials.gov NCT03563417
4. Clinicaltrials.gov NCT03392415

CHRONISCHE TOTALE OCCLUSIE - PCI

Hoog risico PCI

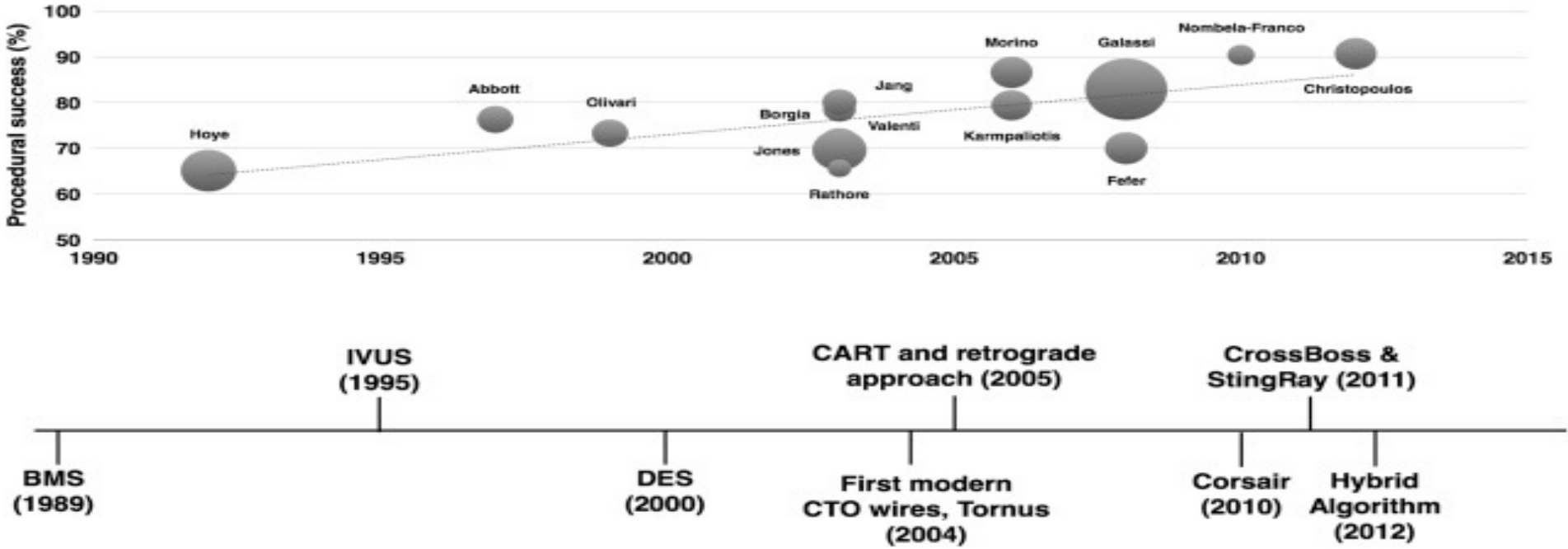
- Complicaties 5-10%

- Zeer ernstige complicaties als bail out hartchirurgie of overlijden <1%

Hoge succeskans >90%

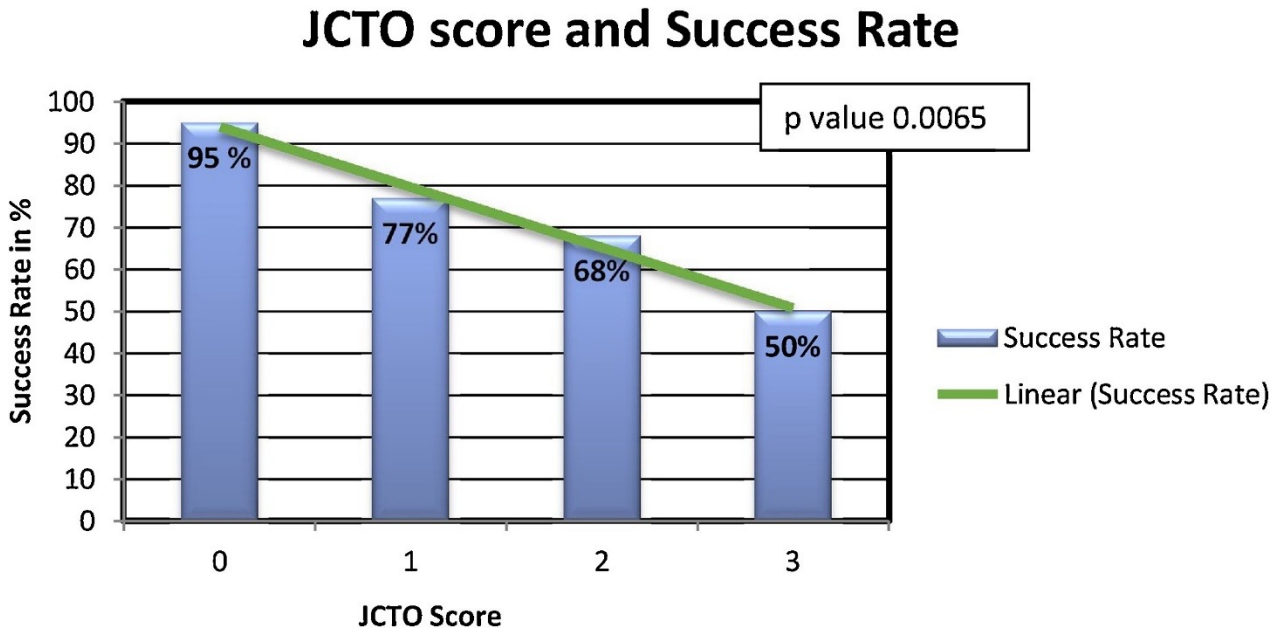
Anatomie is geen beperkende factor meer!

New developments: higher succes rates>90% unselected cases

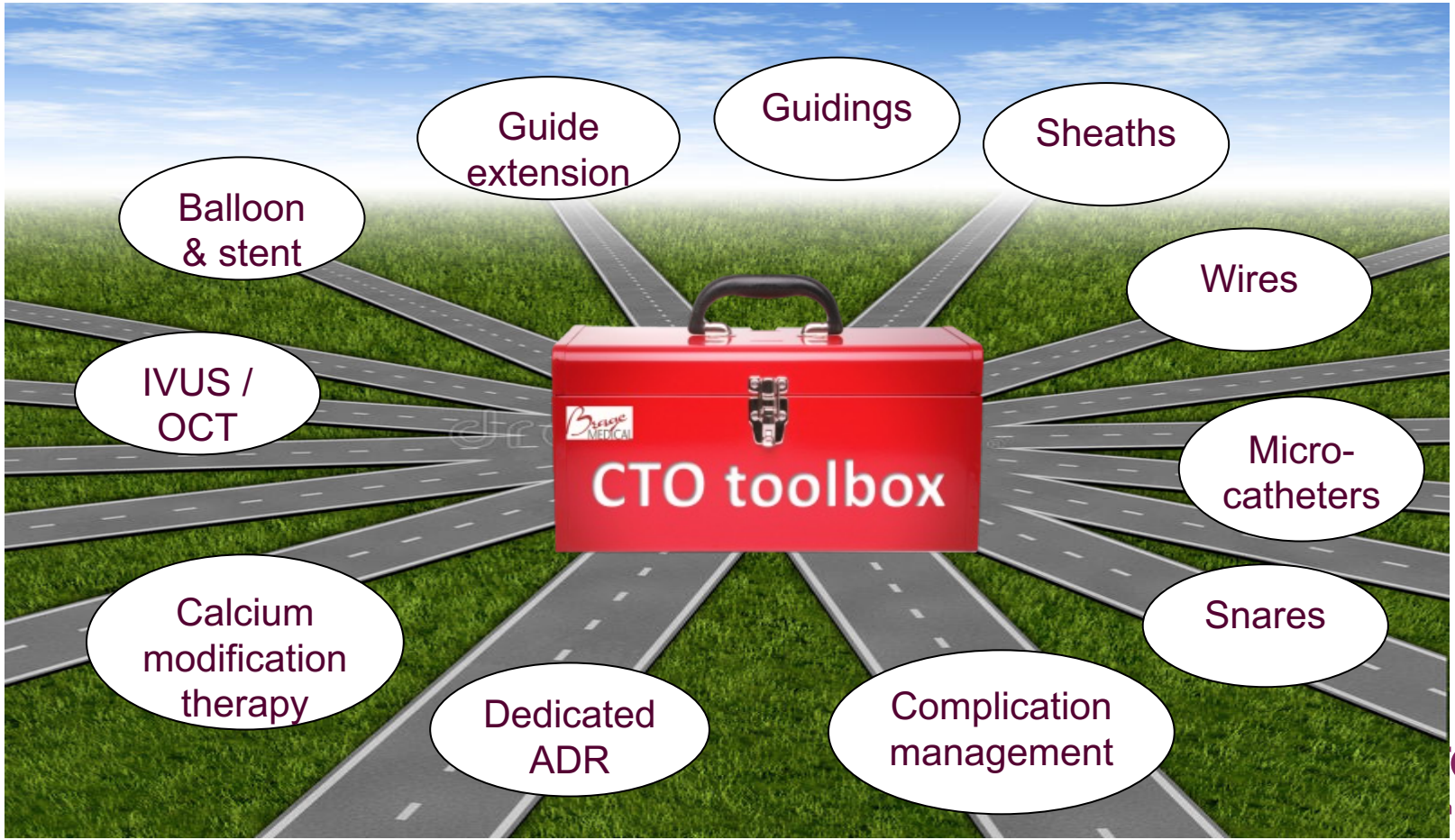


Succeskans antegrade wiring J-CTO score

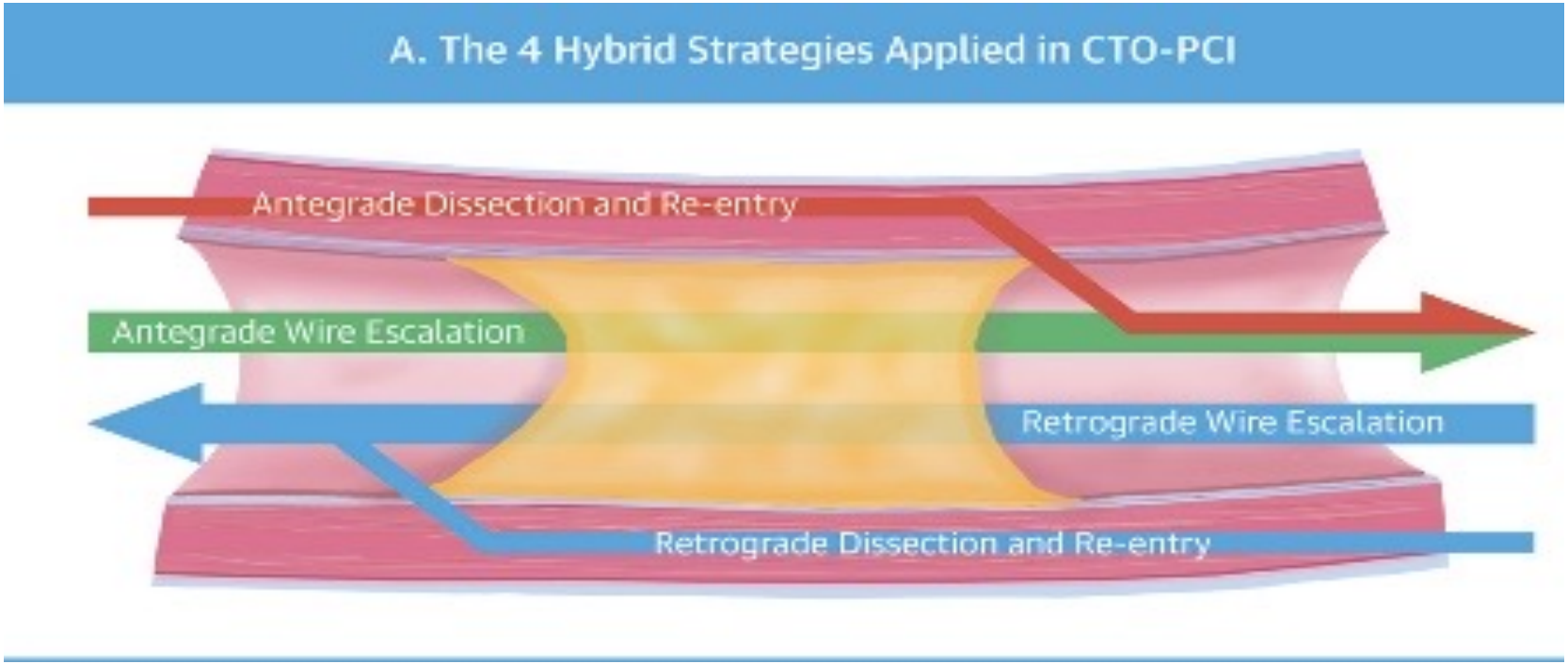
- Stompe cap
- Calcificatie
- Bocht >45˚
- Lengte > 20 mm
- Redo



CHRONISCHE TOTALE OCCLUSIES

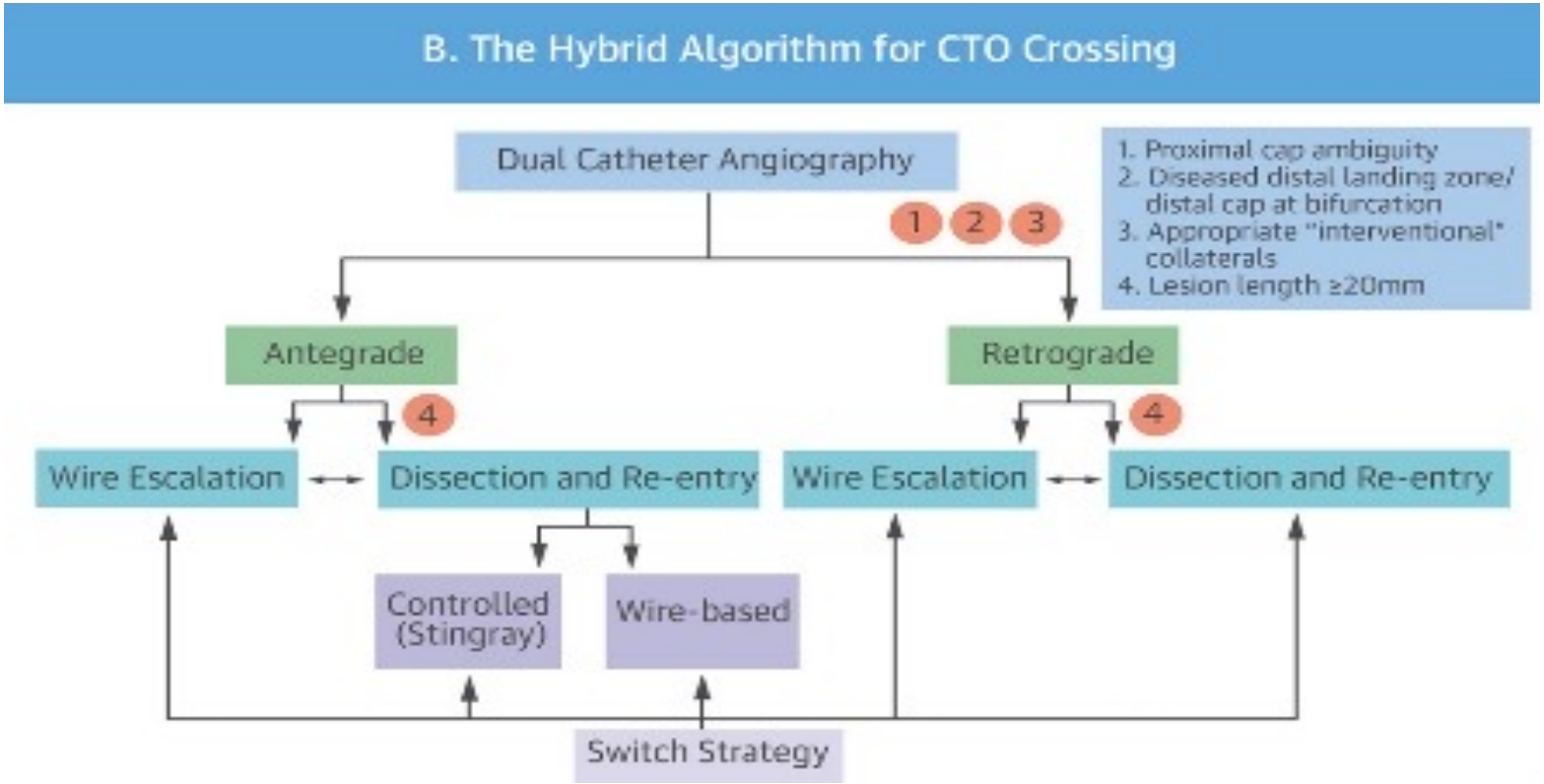


HYBRID STRATEGIES



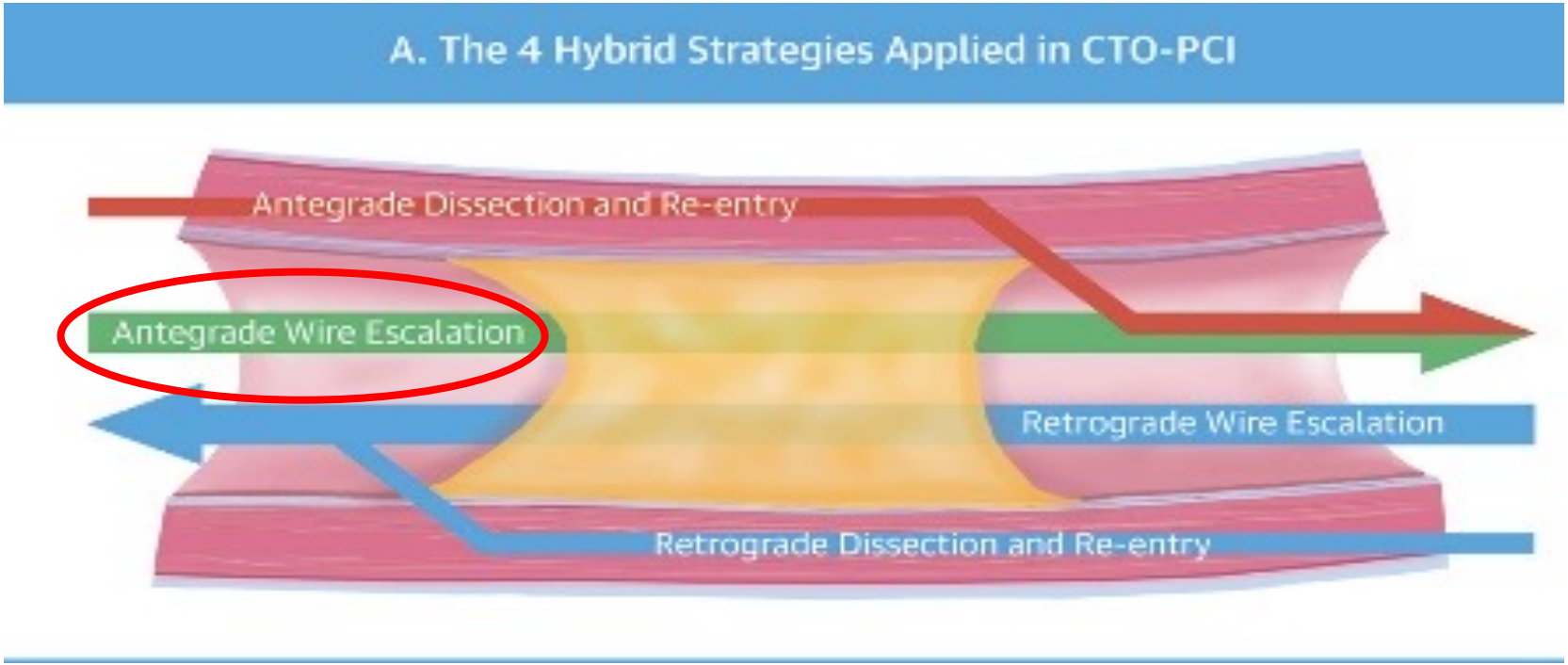
Maeremans et al JACC 2016

THE HYBRID ALGORITHM



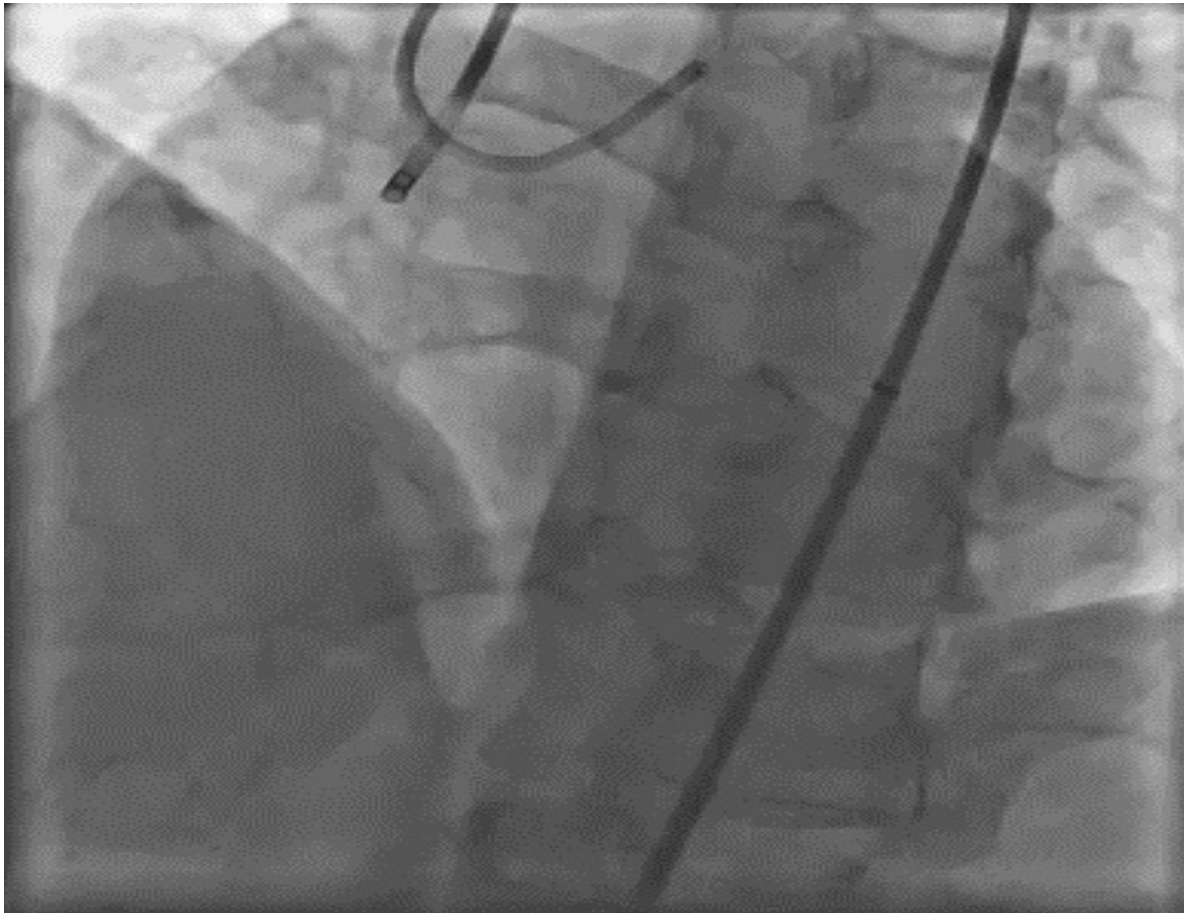
Brilakis et al. JACC cardiovascular interventions 2012
Maeremans et al JACC 2016

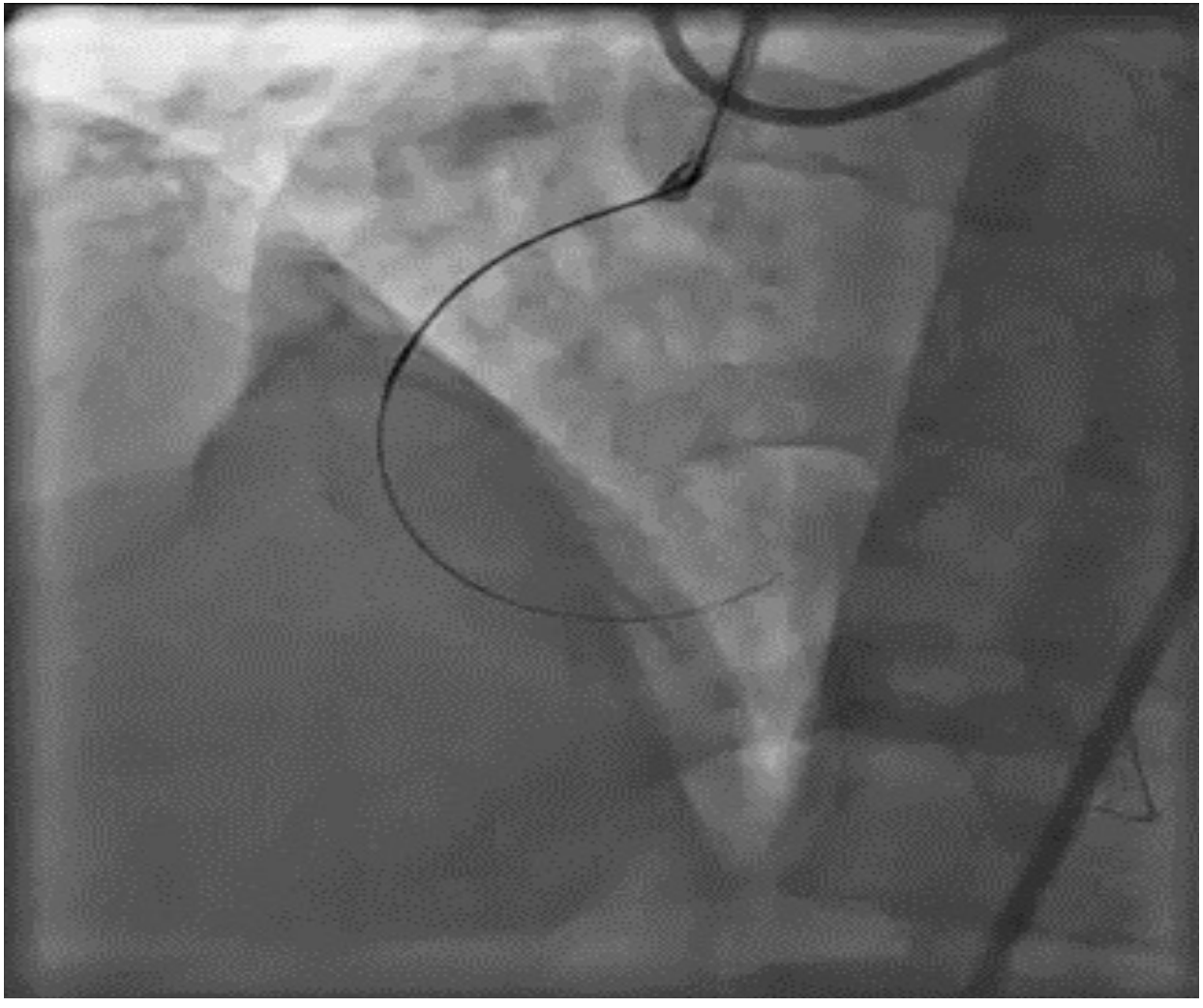
HYBRID STRATEGIES

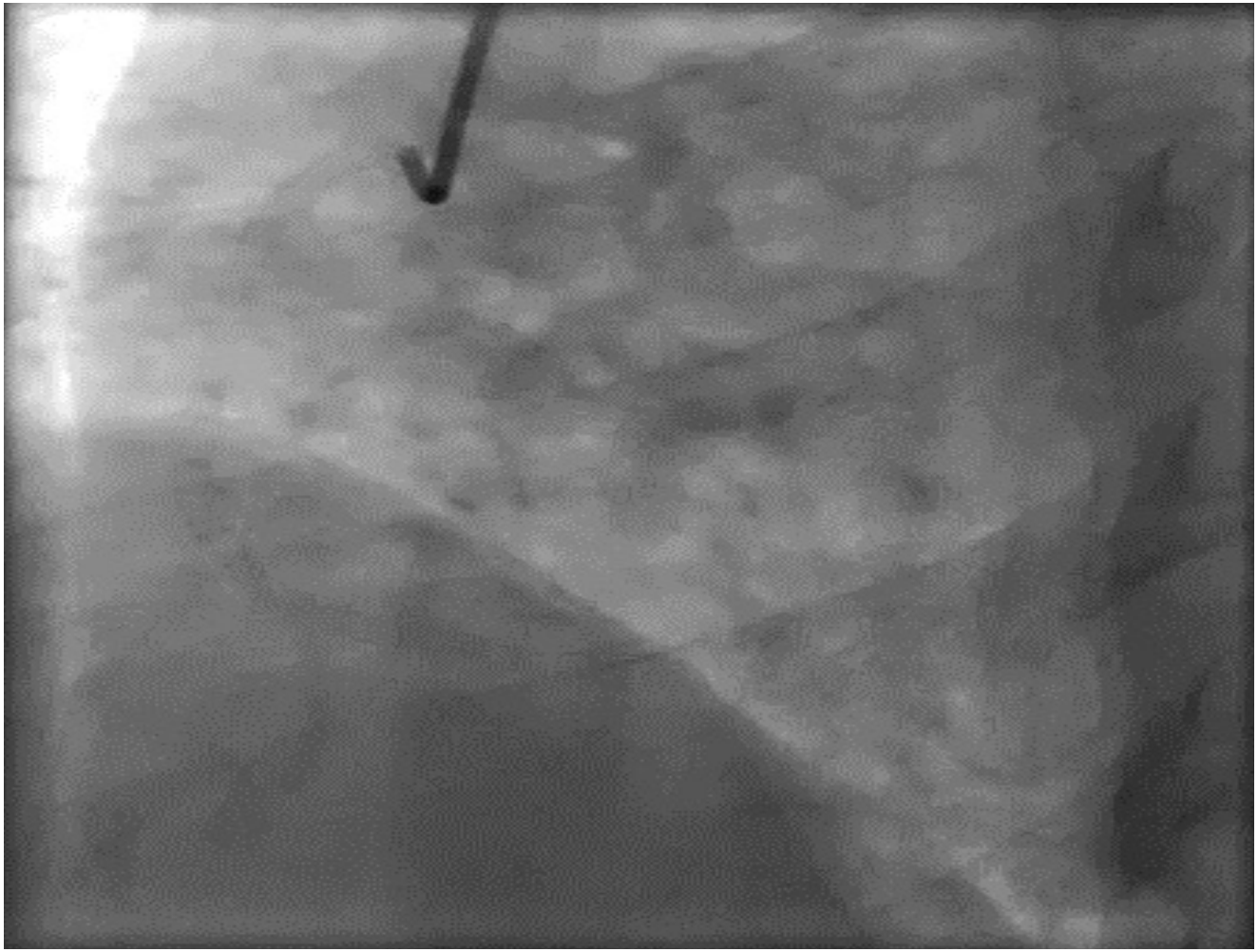


Maeremans et al JACC 2016

Antegrade wiring (AWE)







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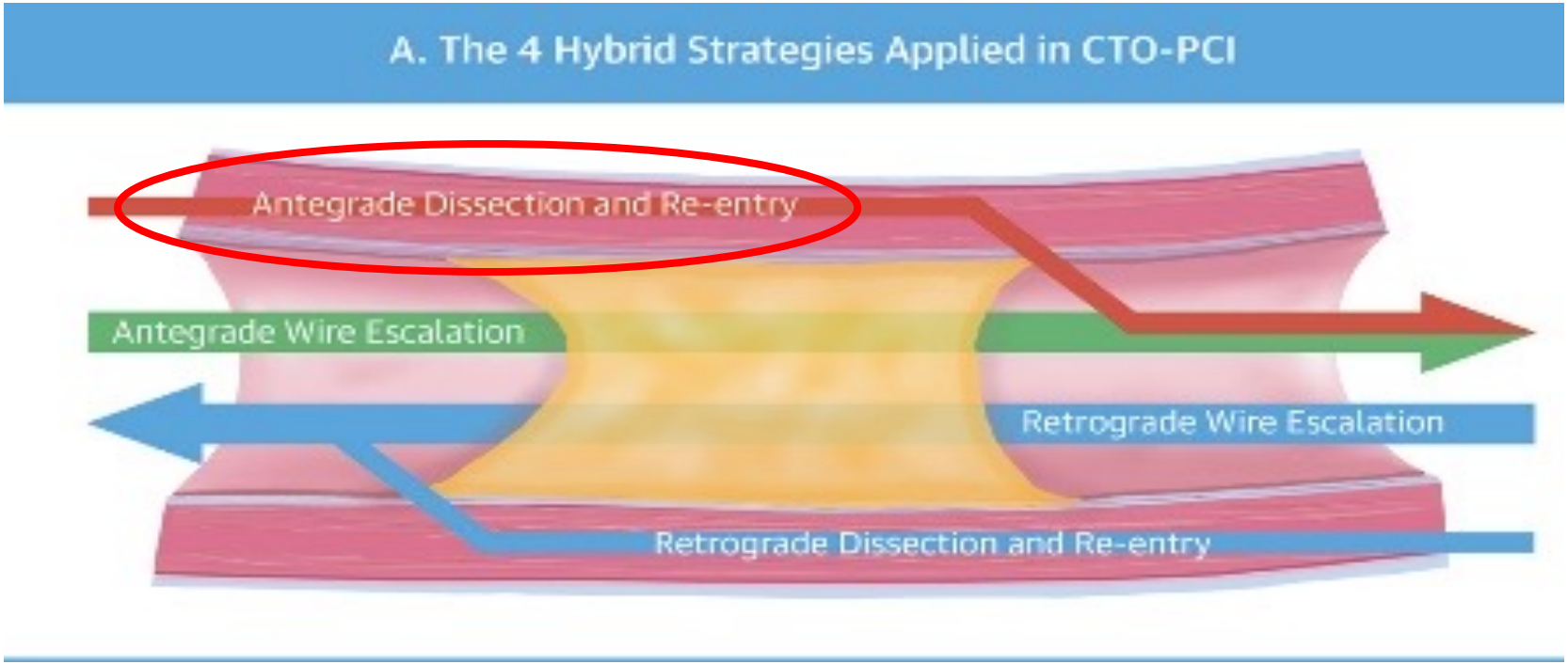
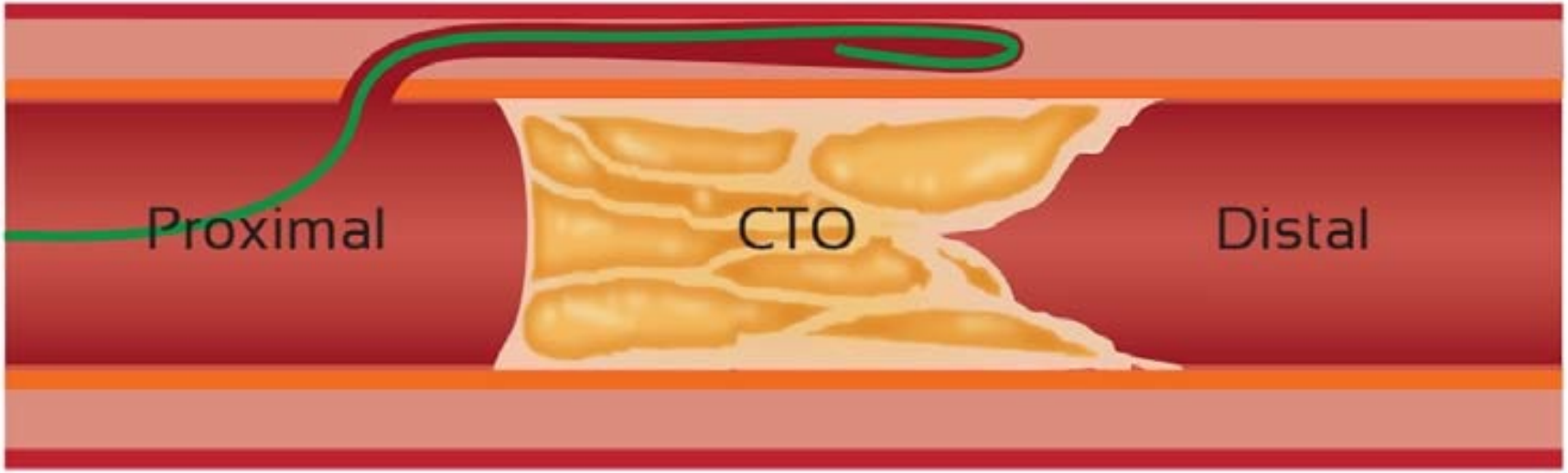
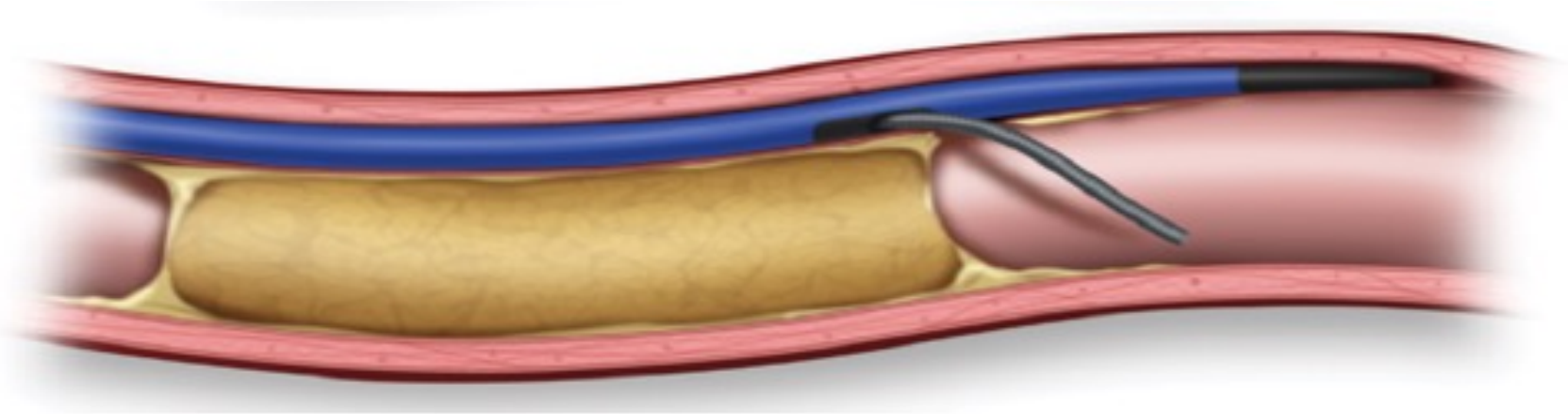
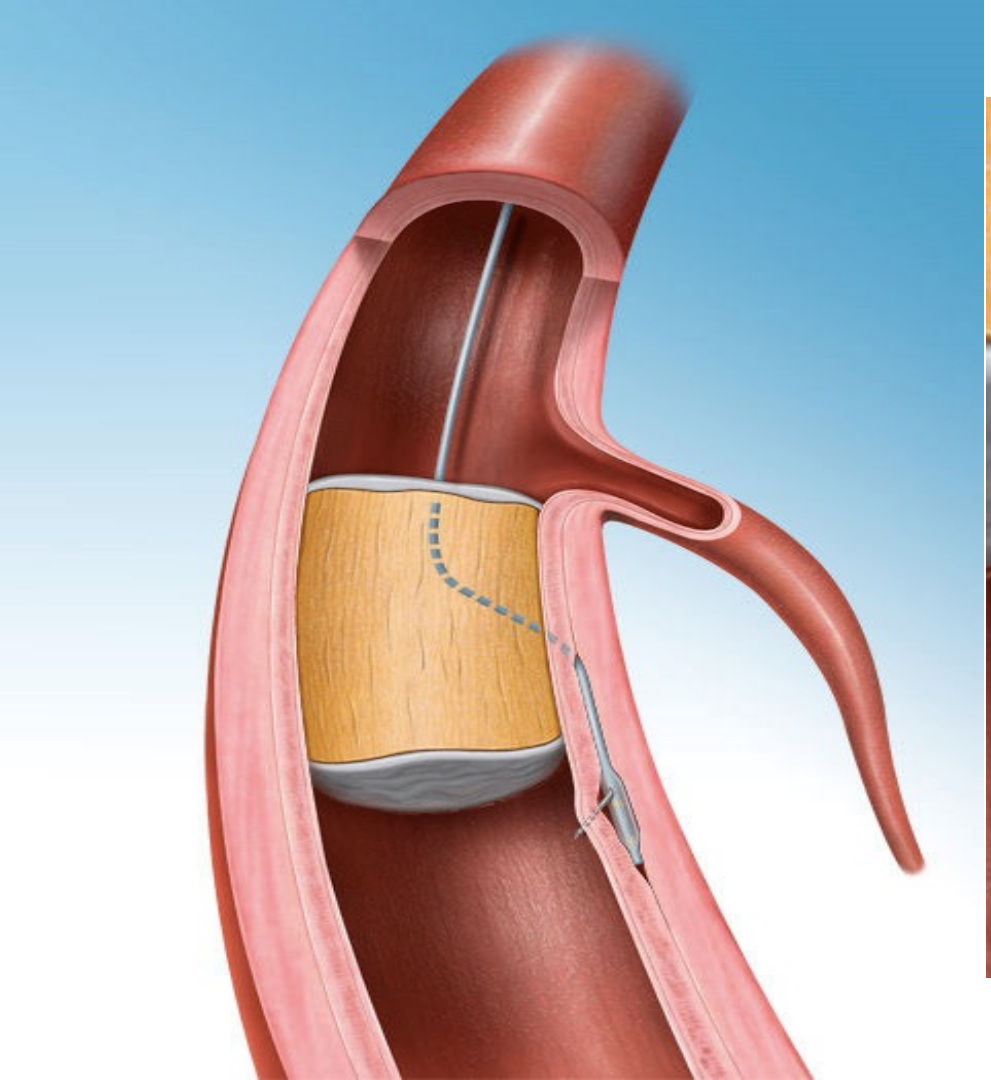


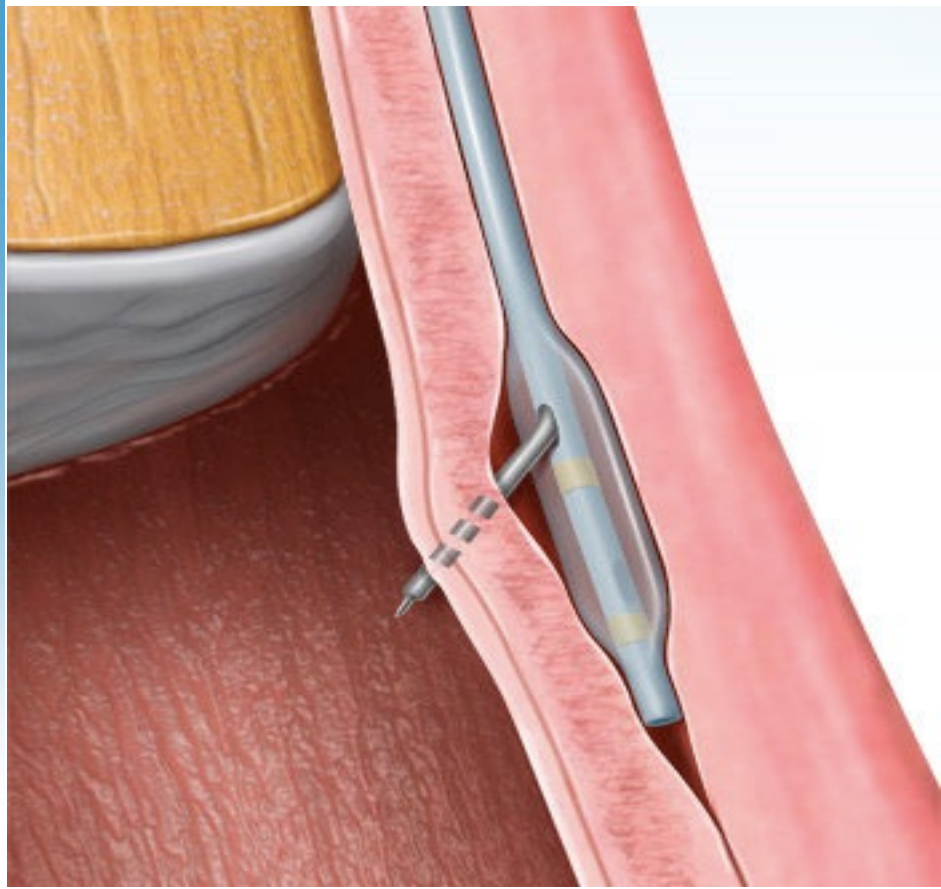
Maeremans et al JACC 2016

Knuckle Wire

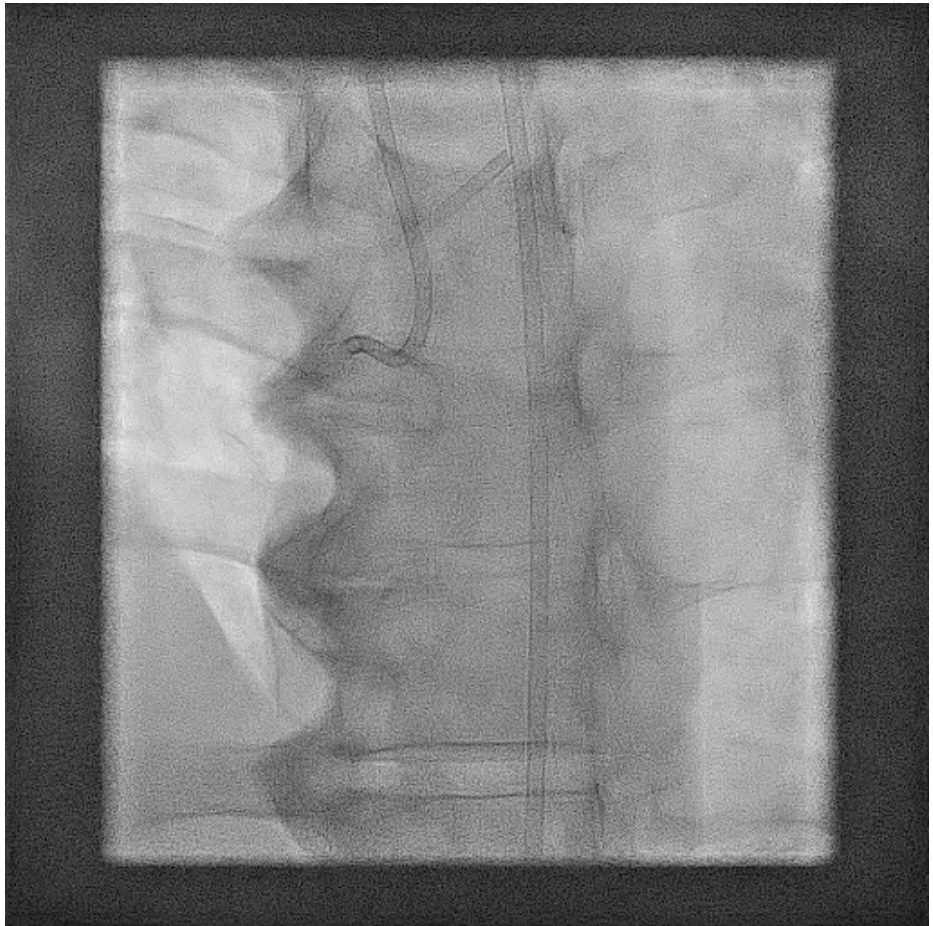








Antegrade dissection and reentry (ADR)



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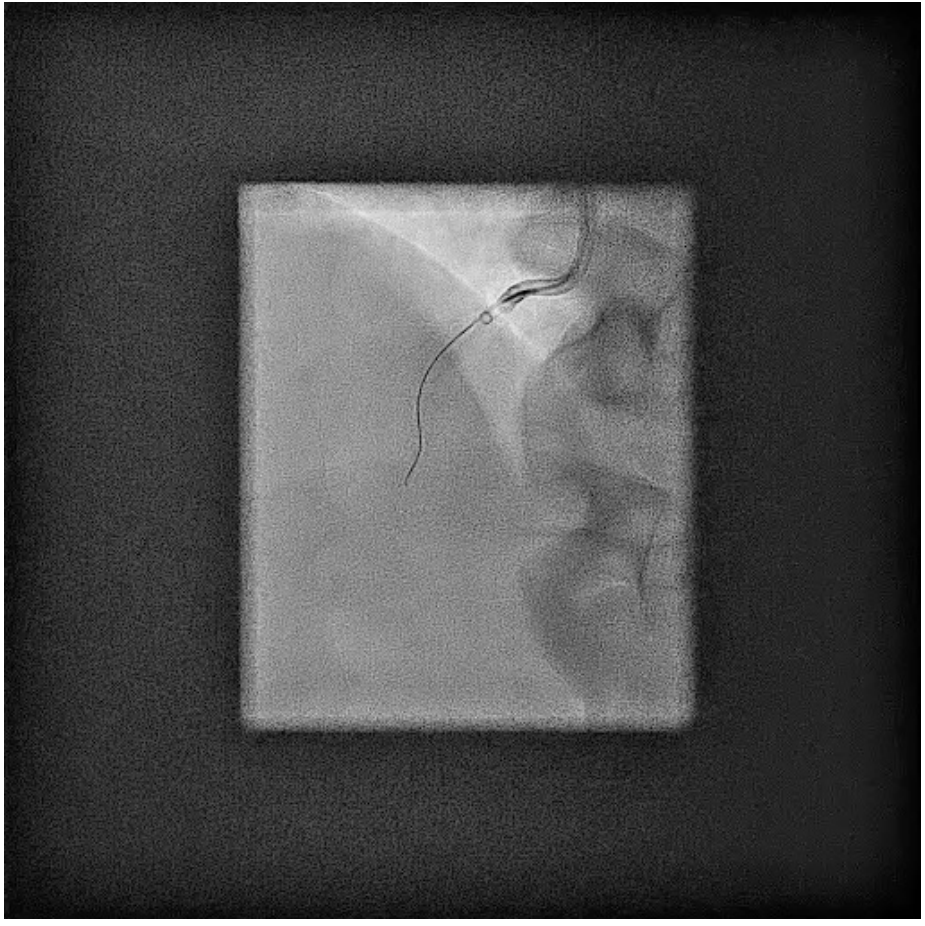
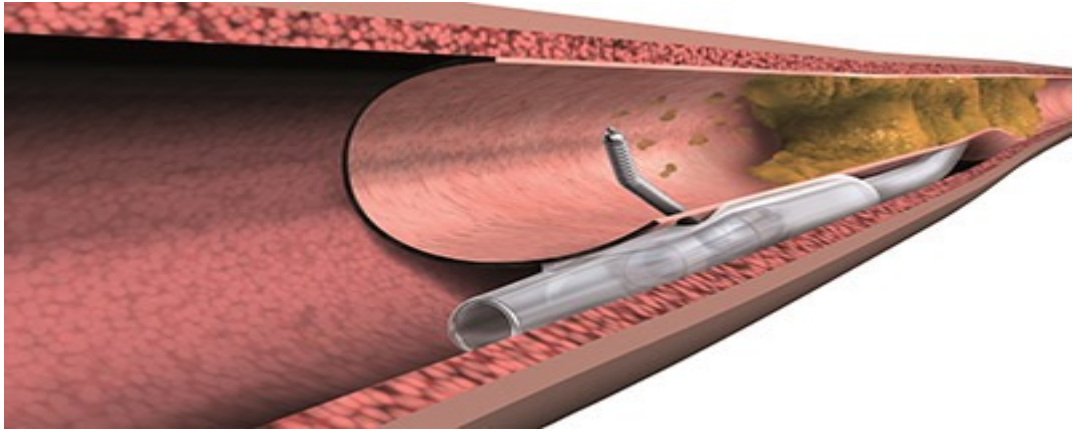


Stingray



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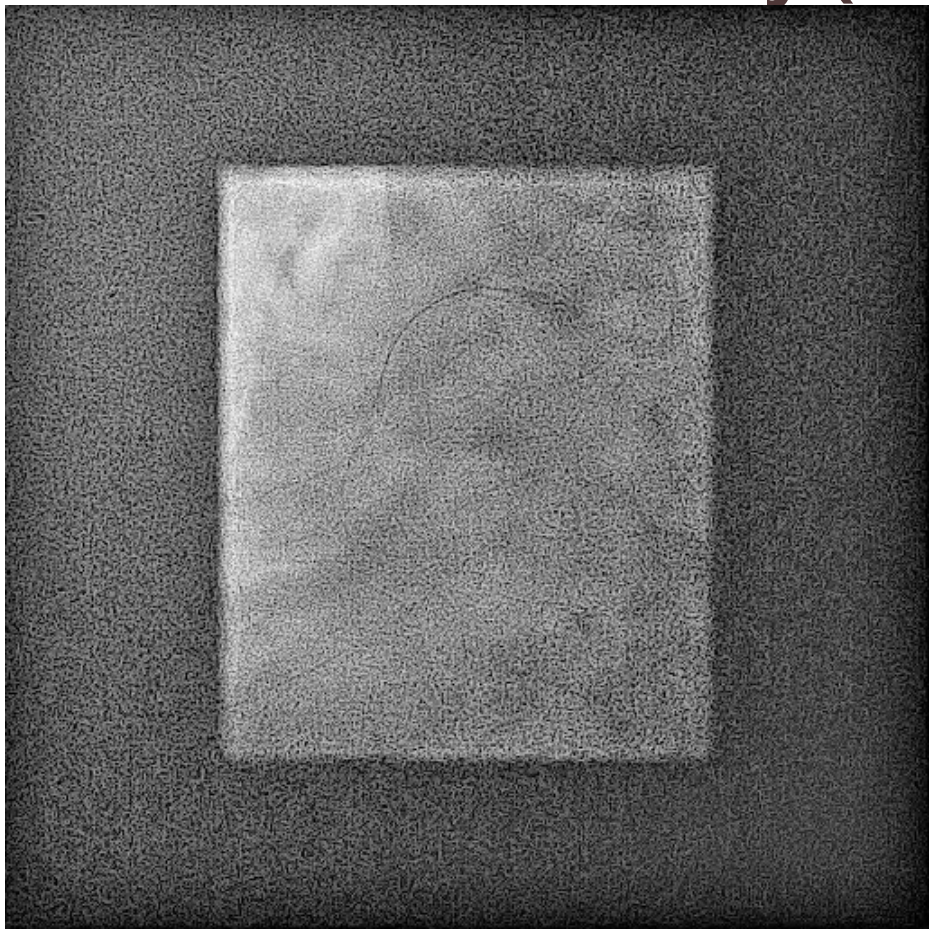

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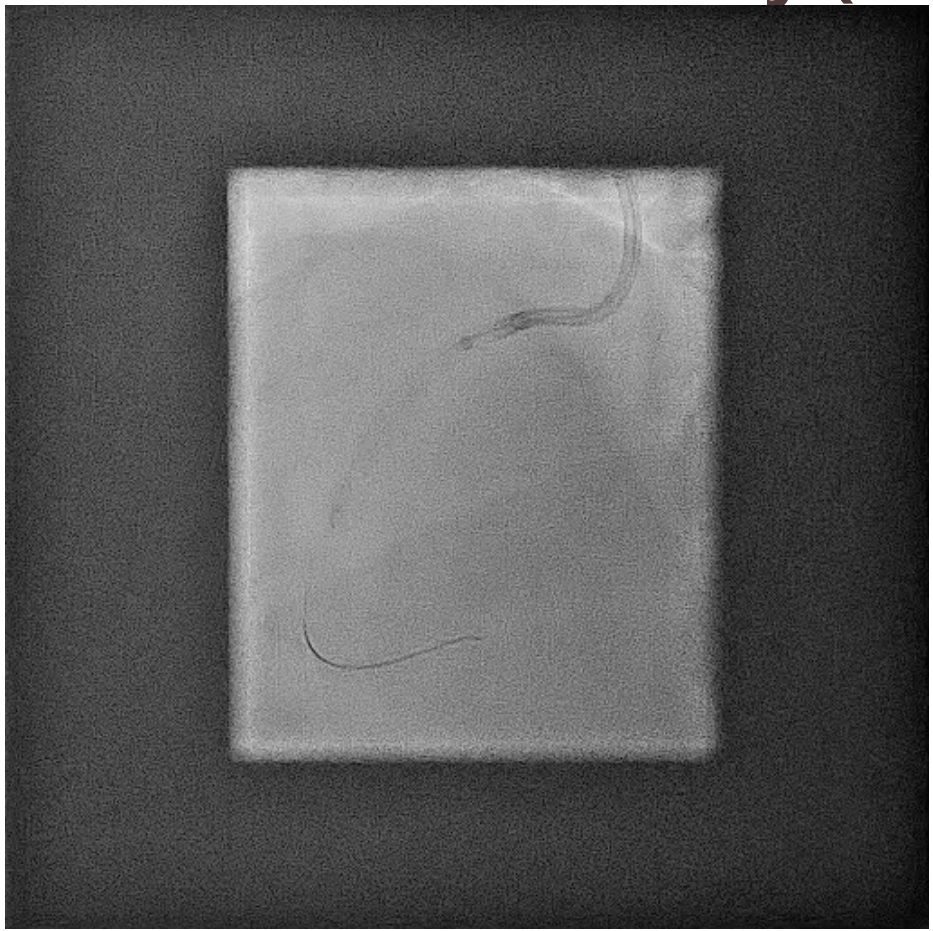

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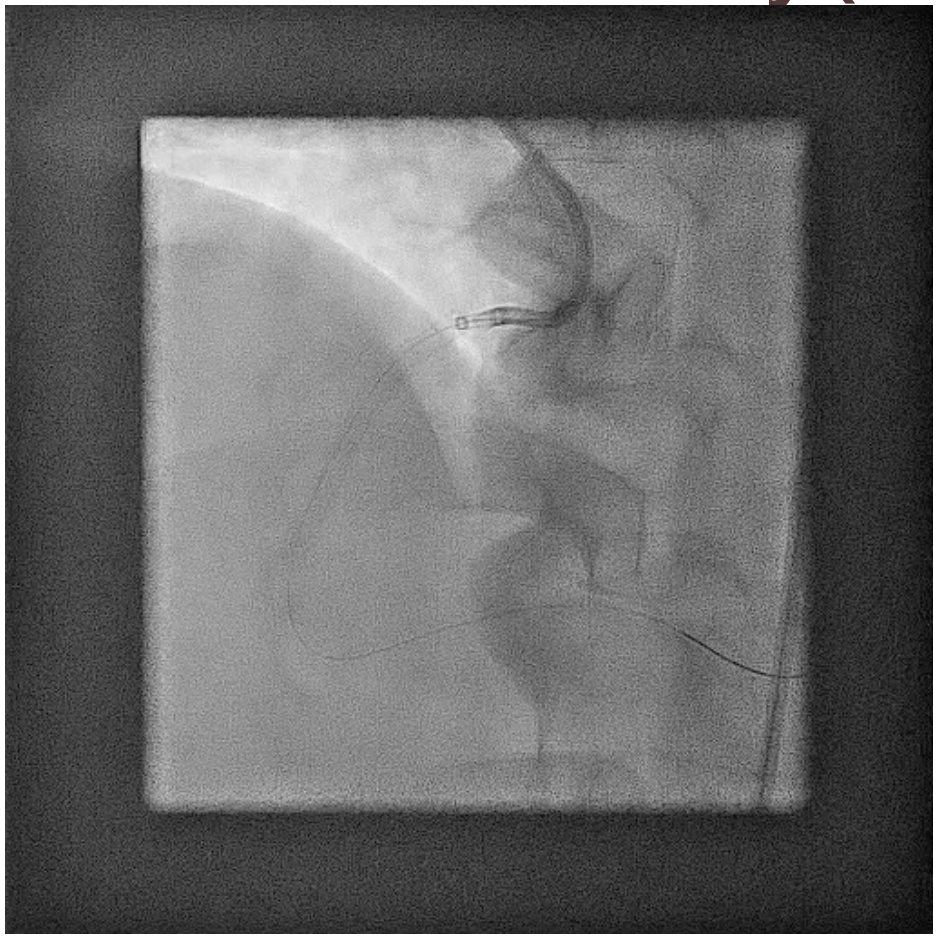
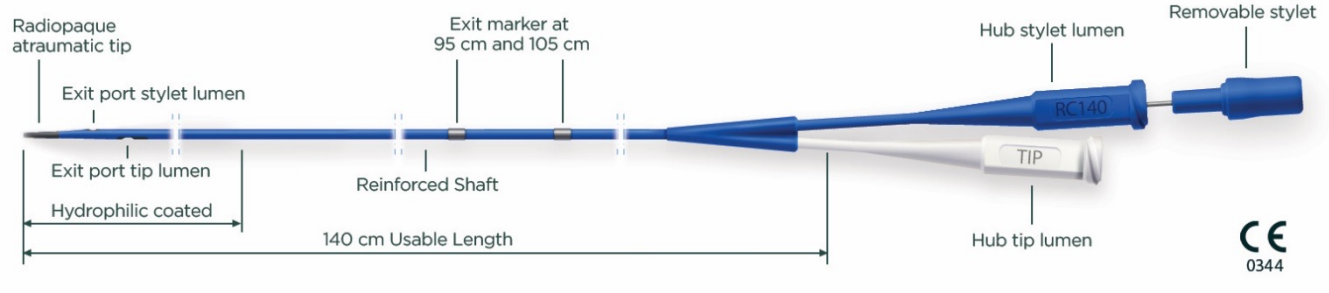
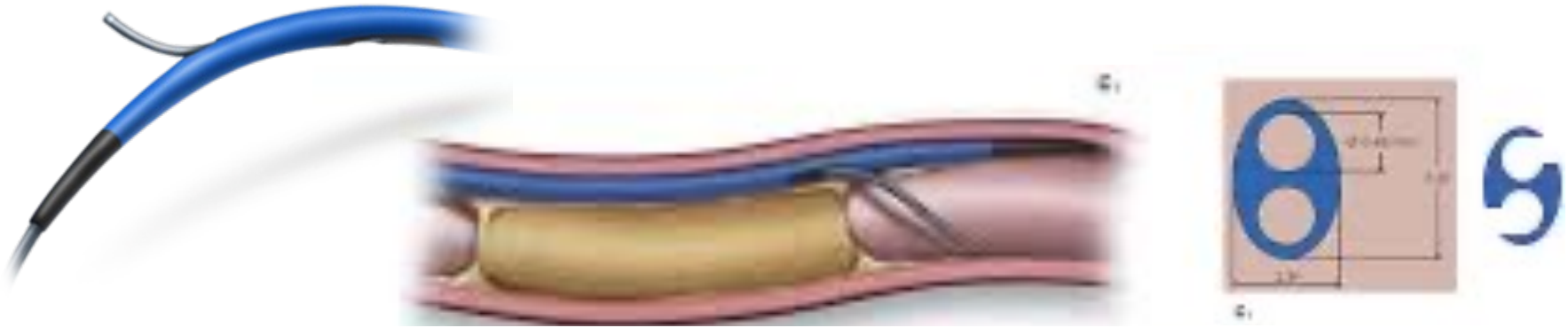
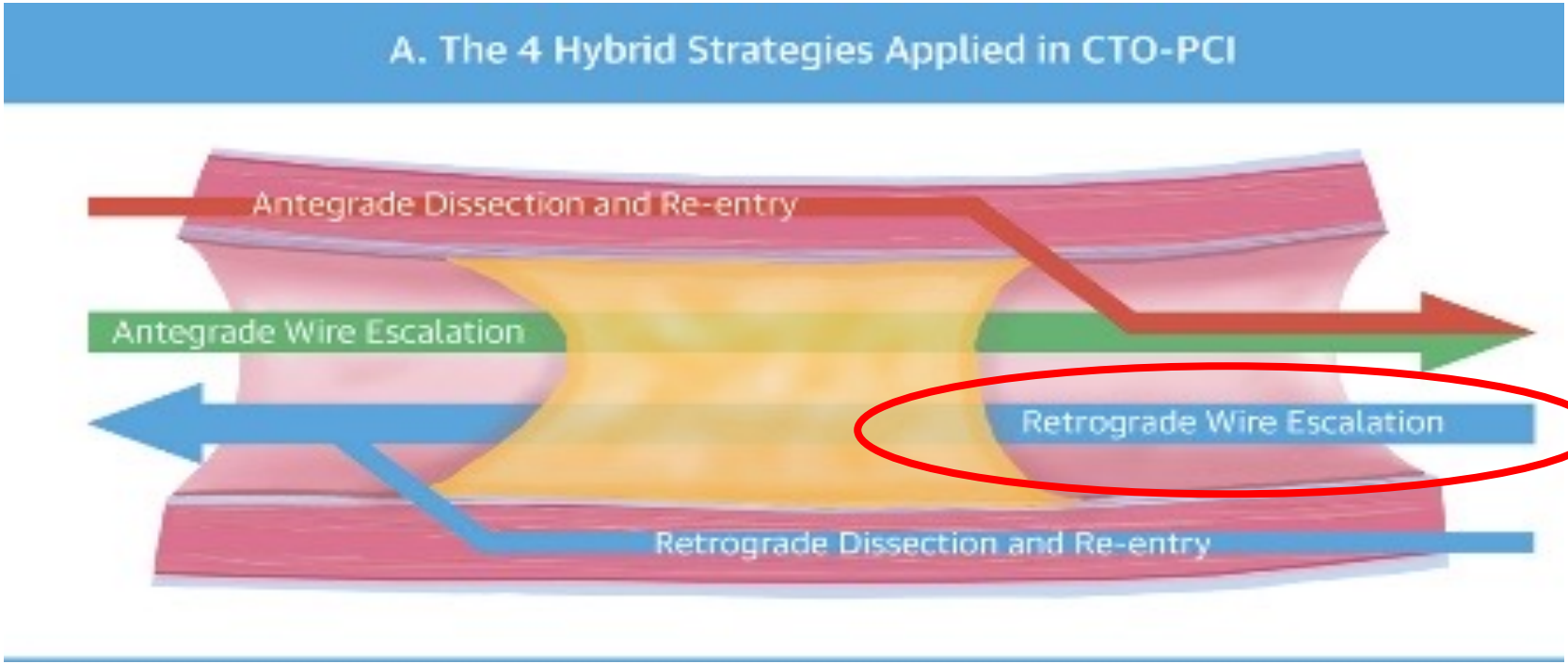


Recross dual lumen microcatheter



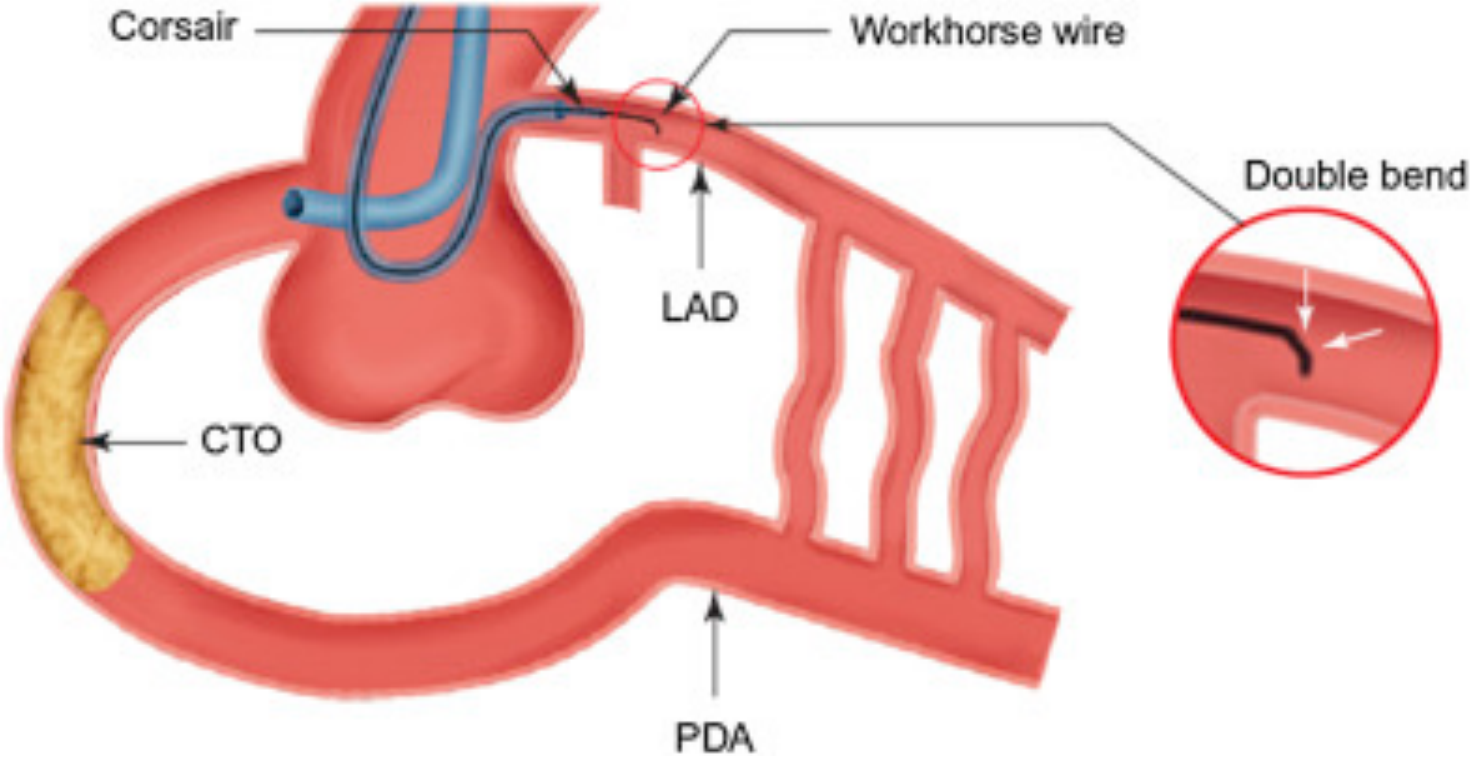


HYBRID STRATEGIES



Maeremans et al JACC 2016

Retrograde benadering



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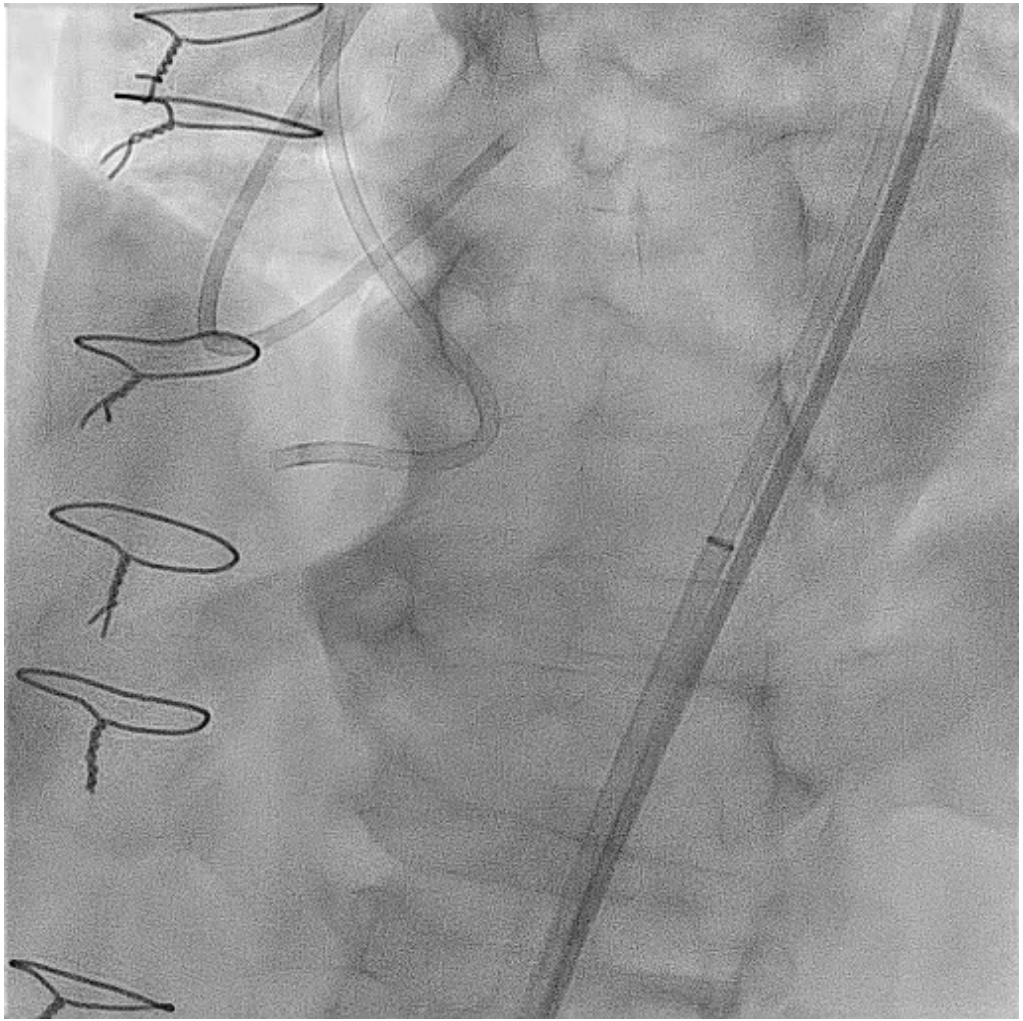

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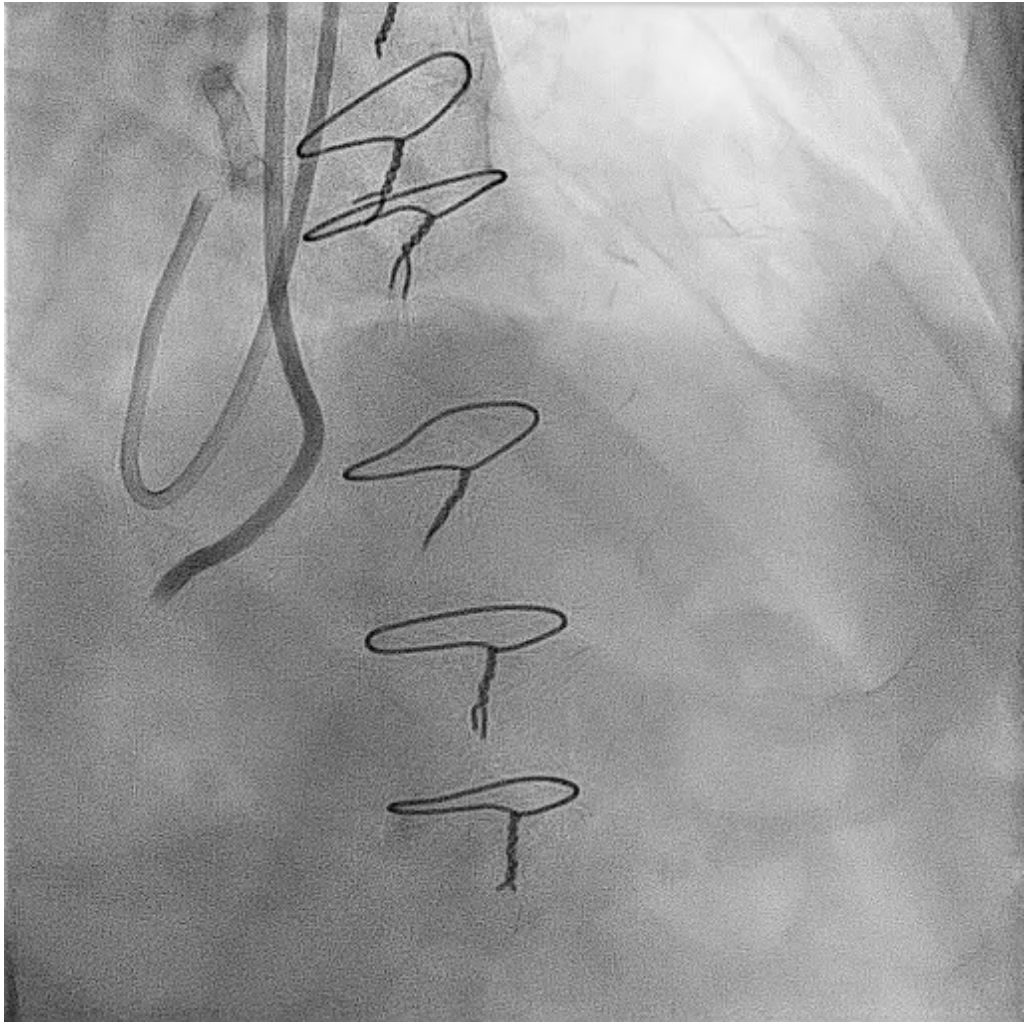

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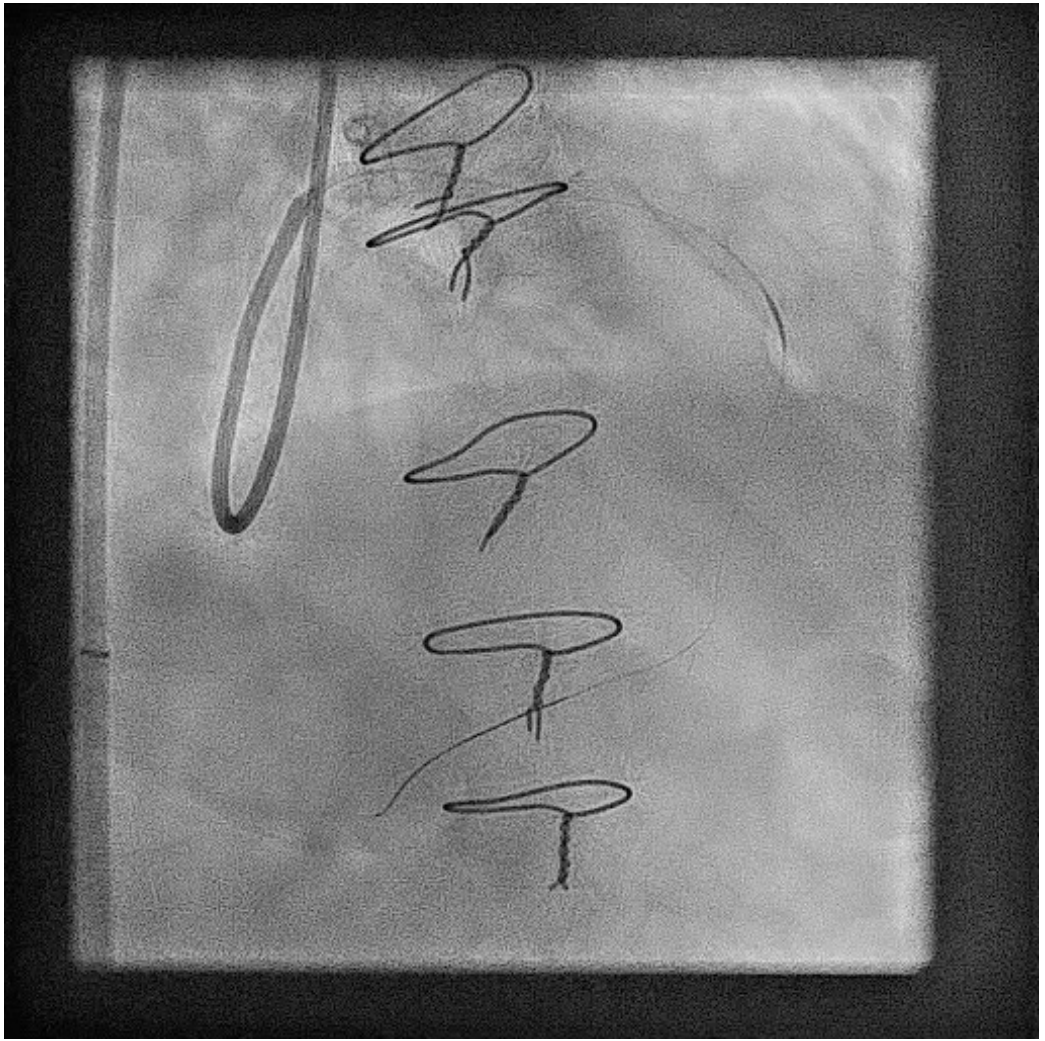

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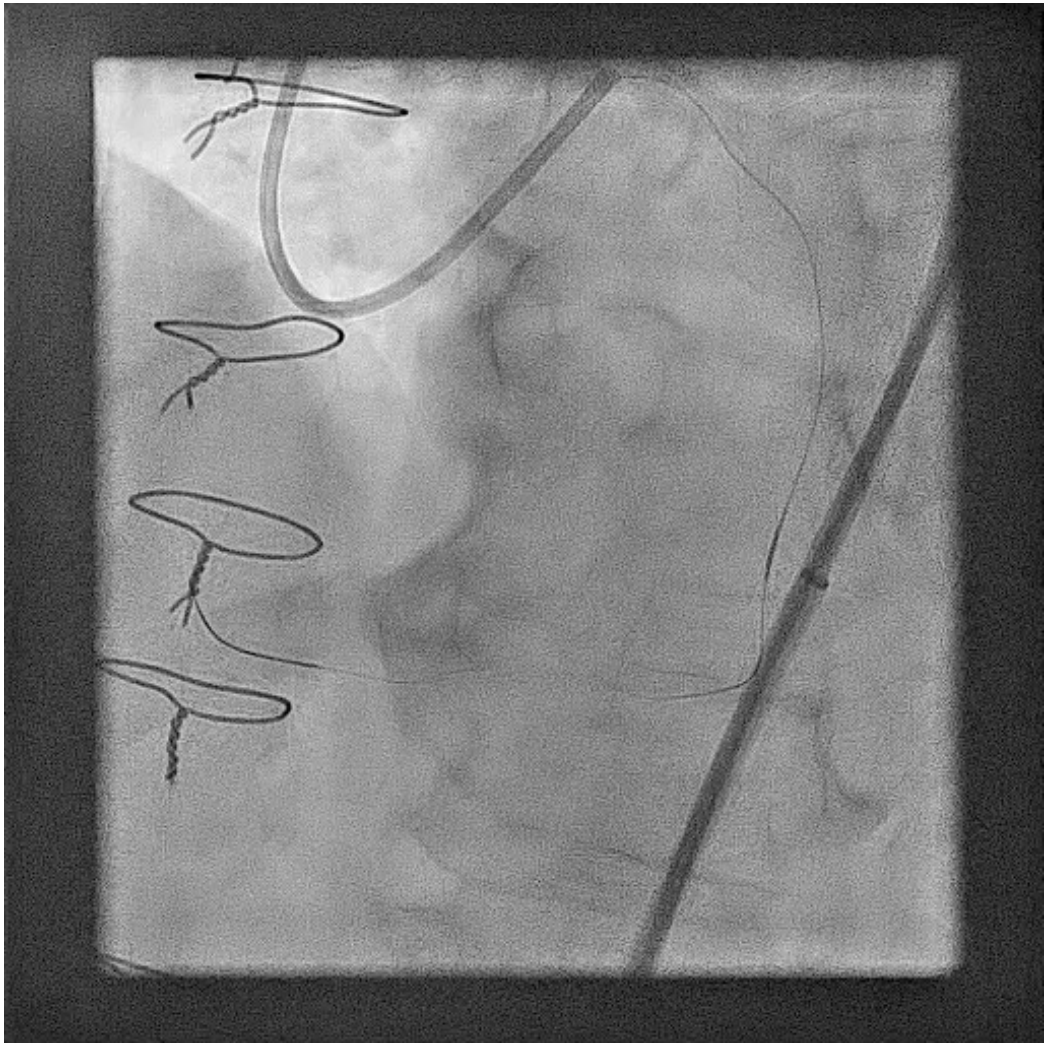

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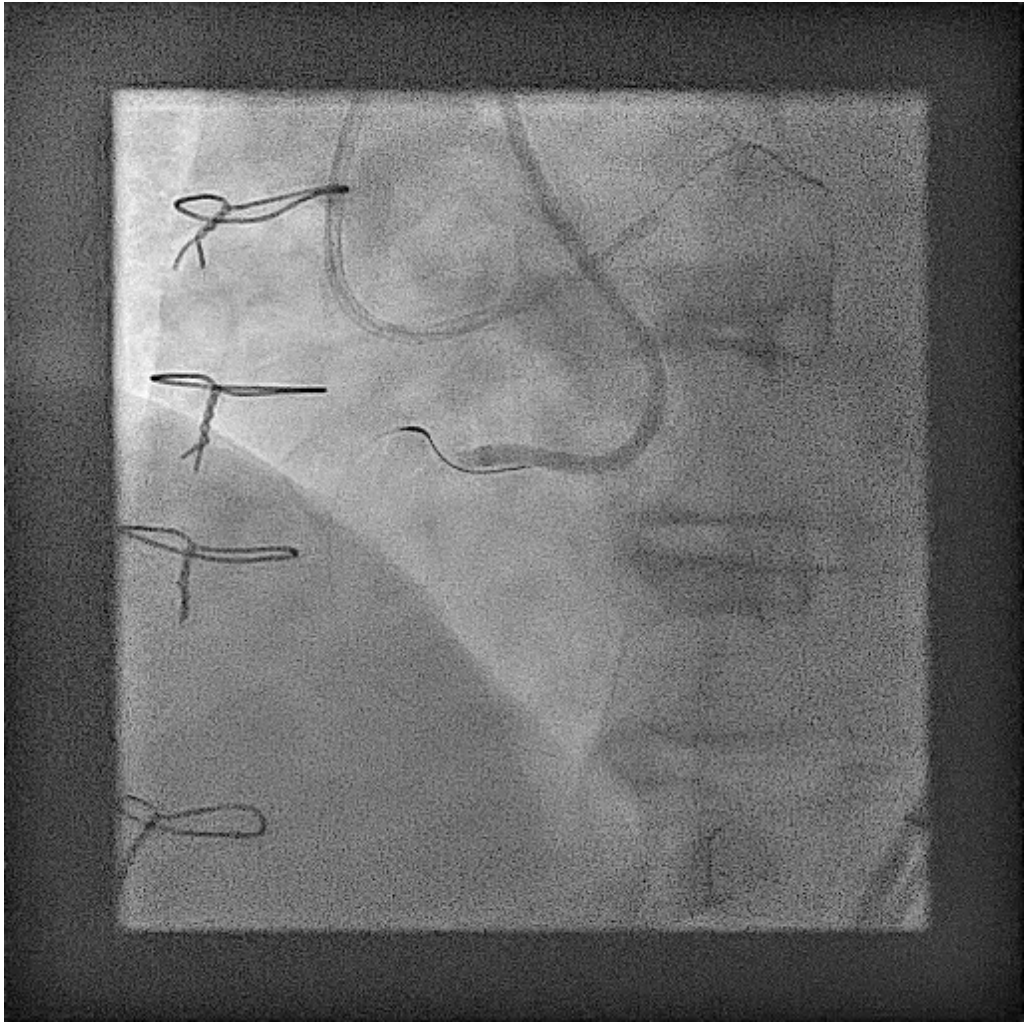

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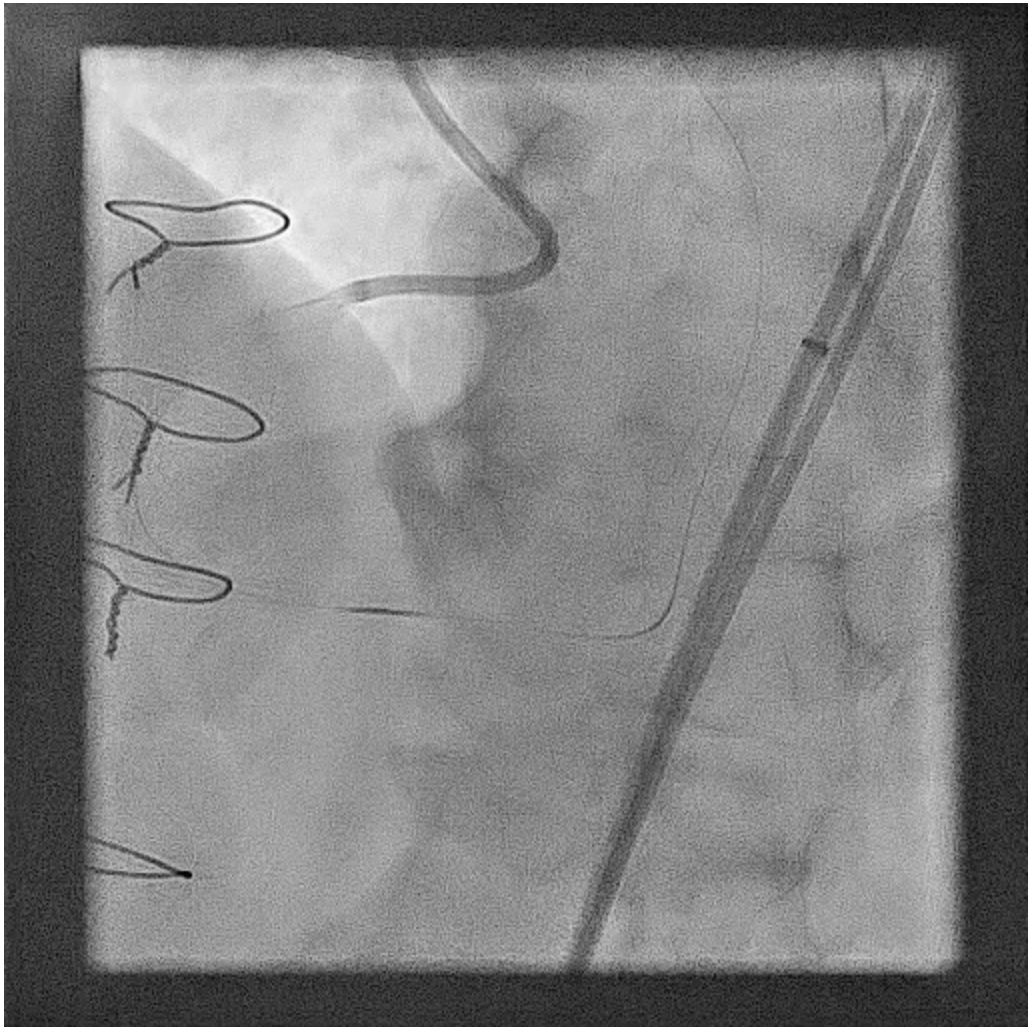

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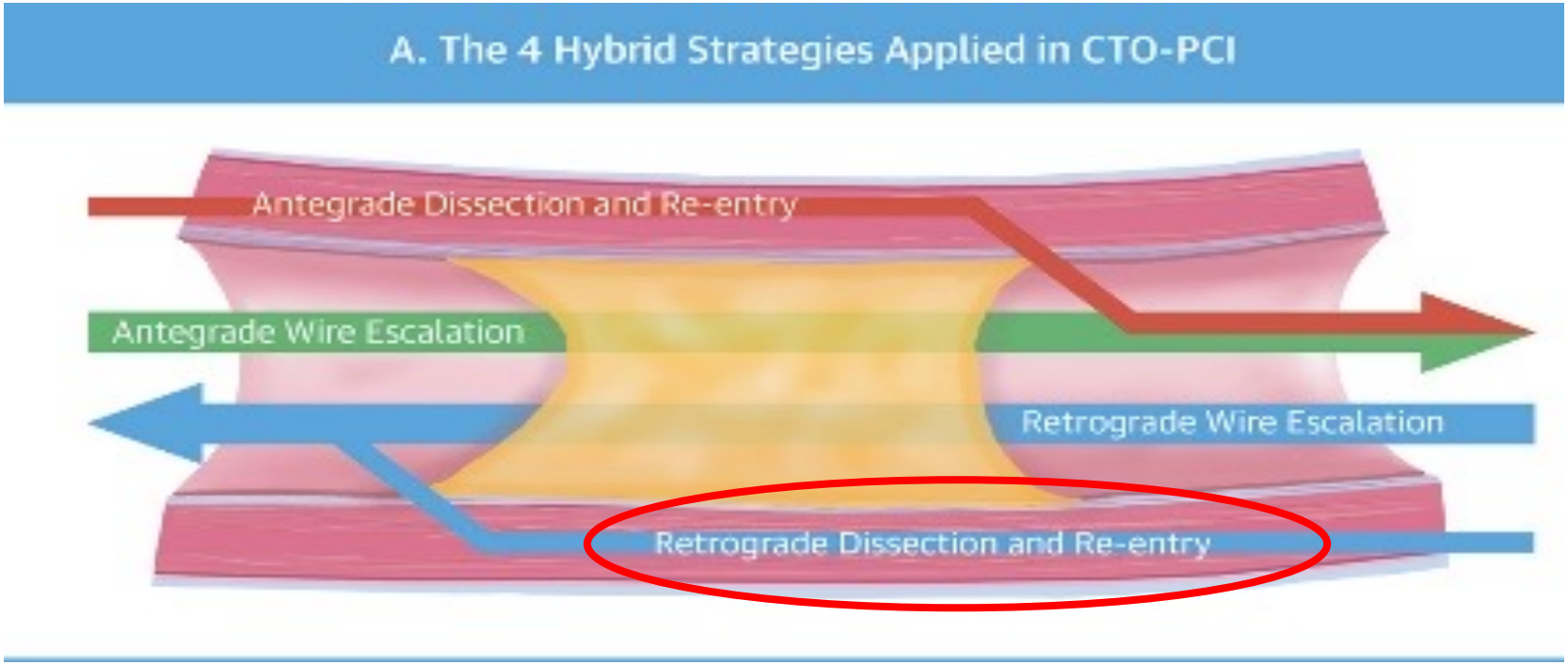
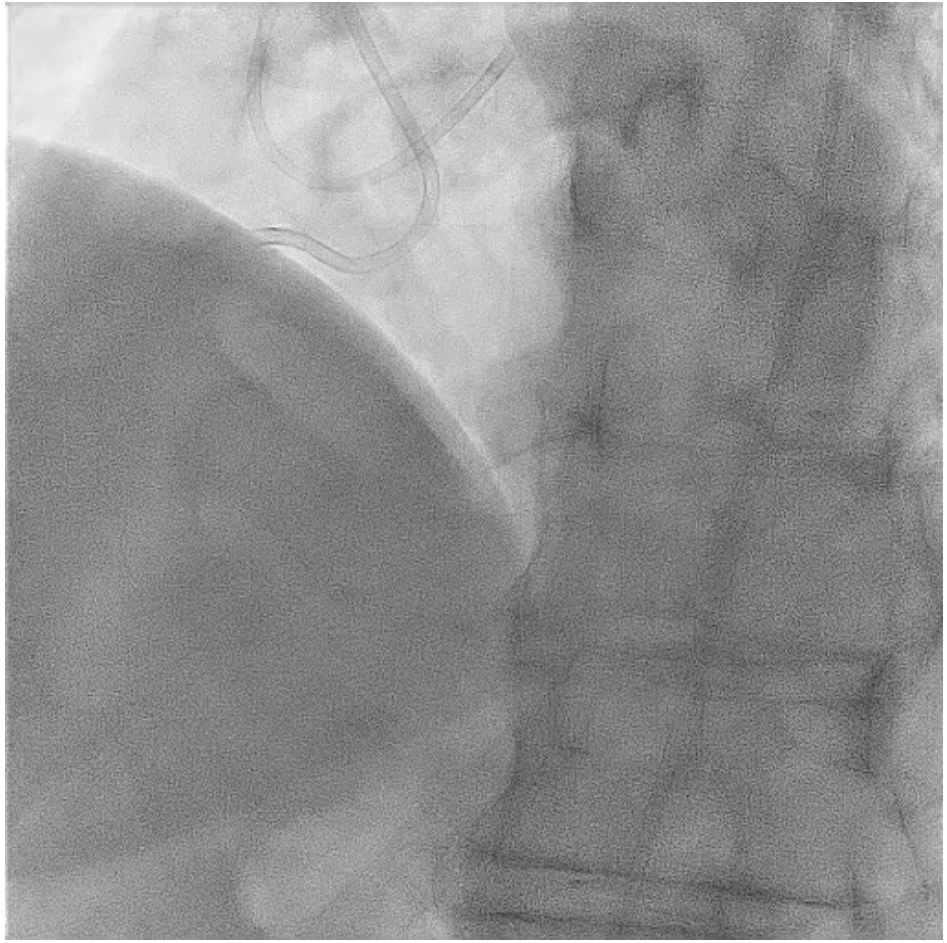
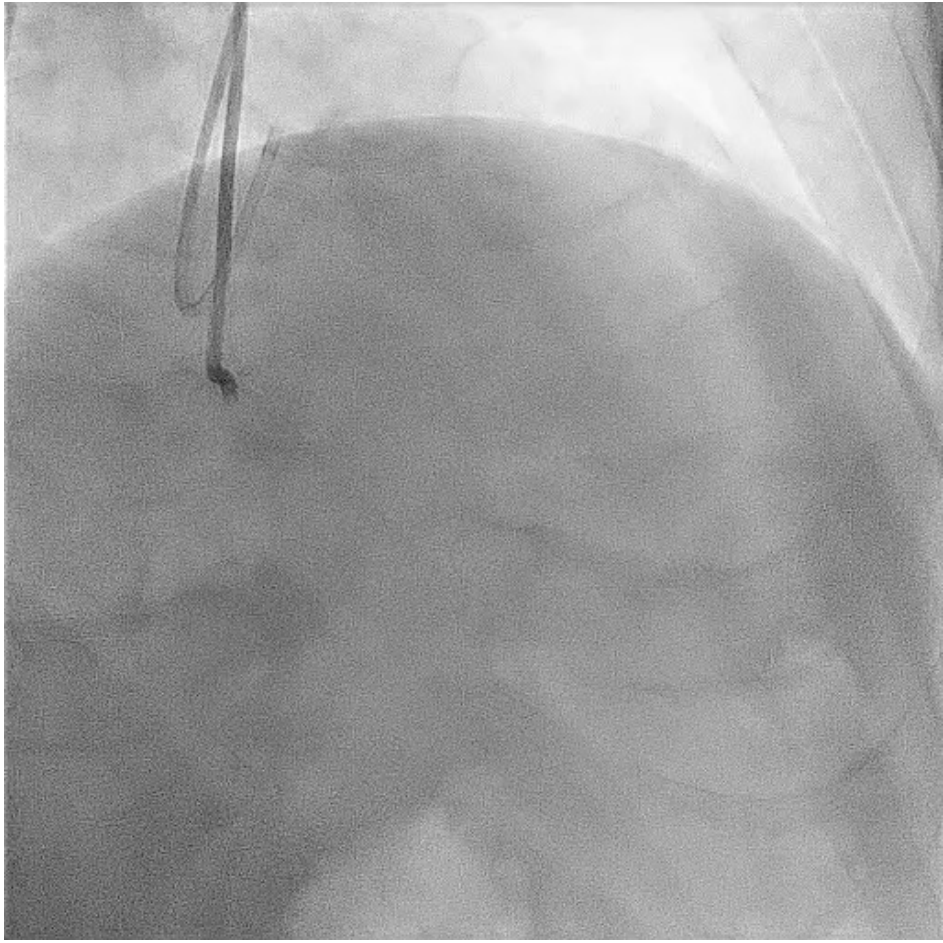


Maeremans et al JACC 2016

Retrograde dissection and reentry





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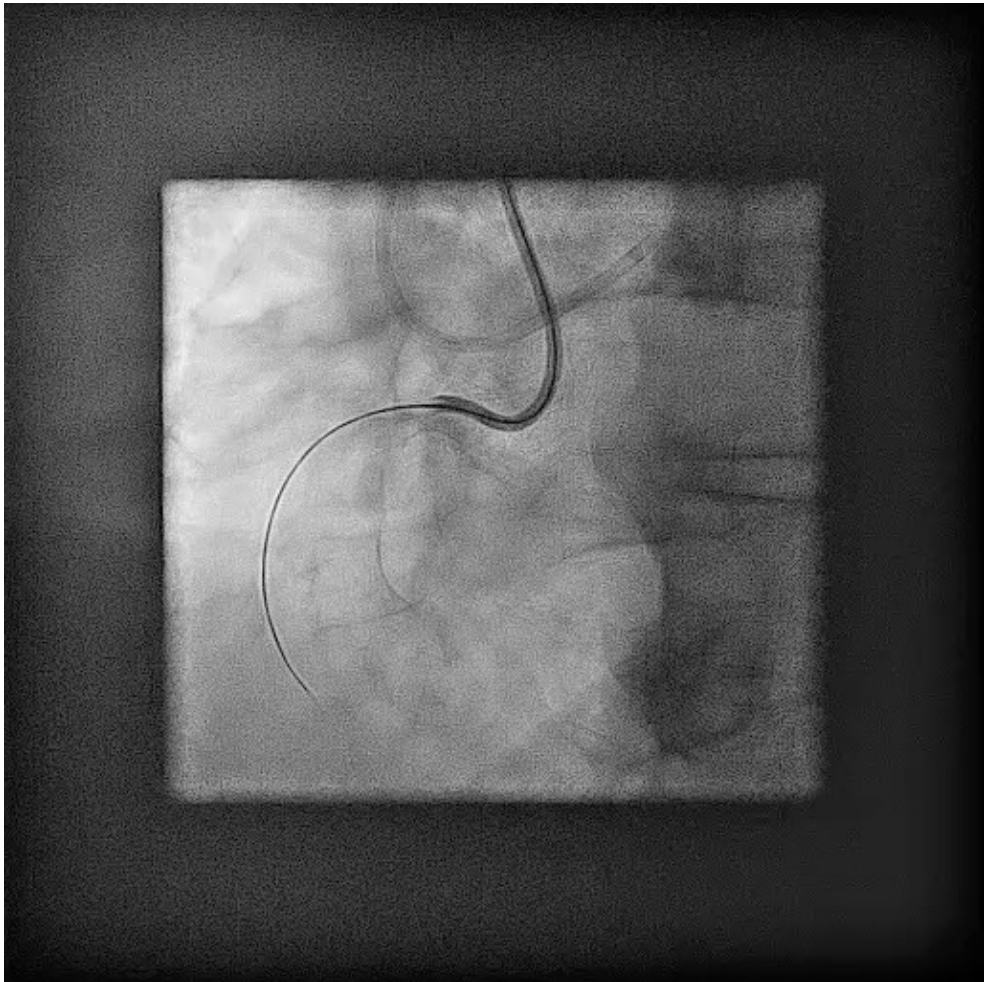

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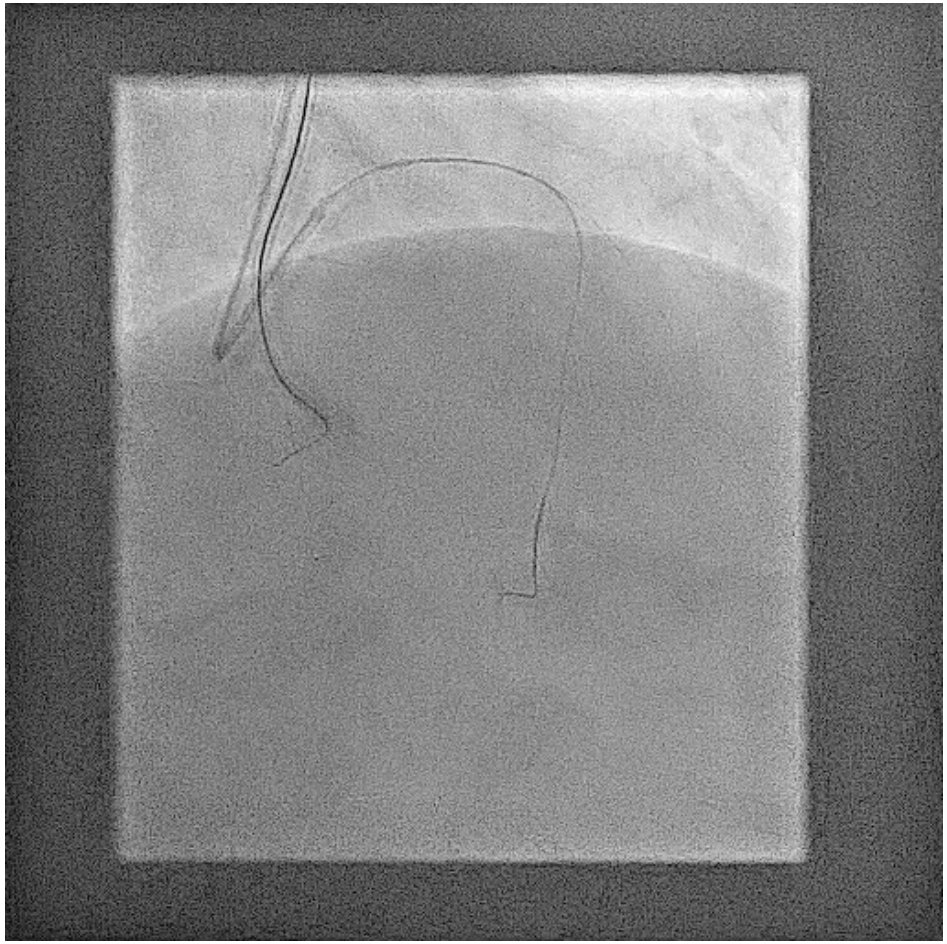

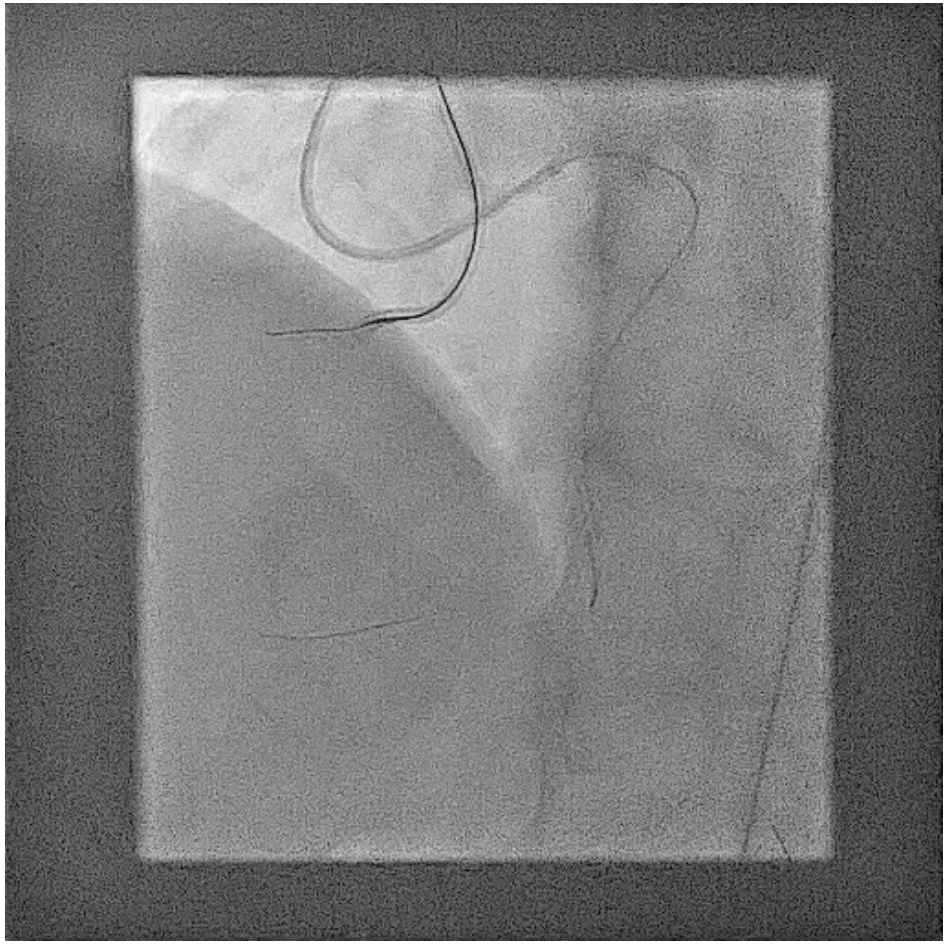

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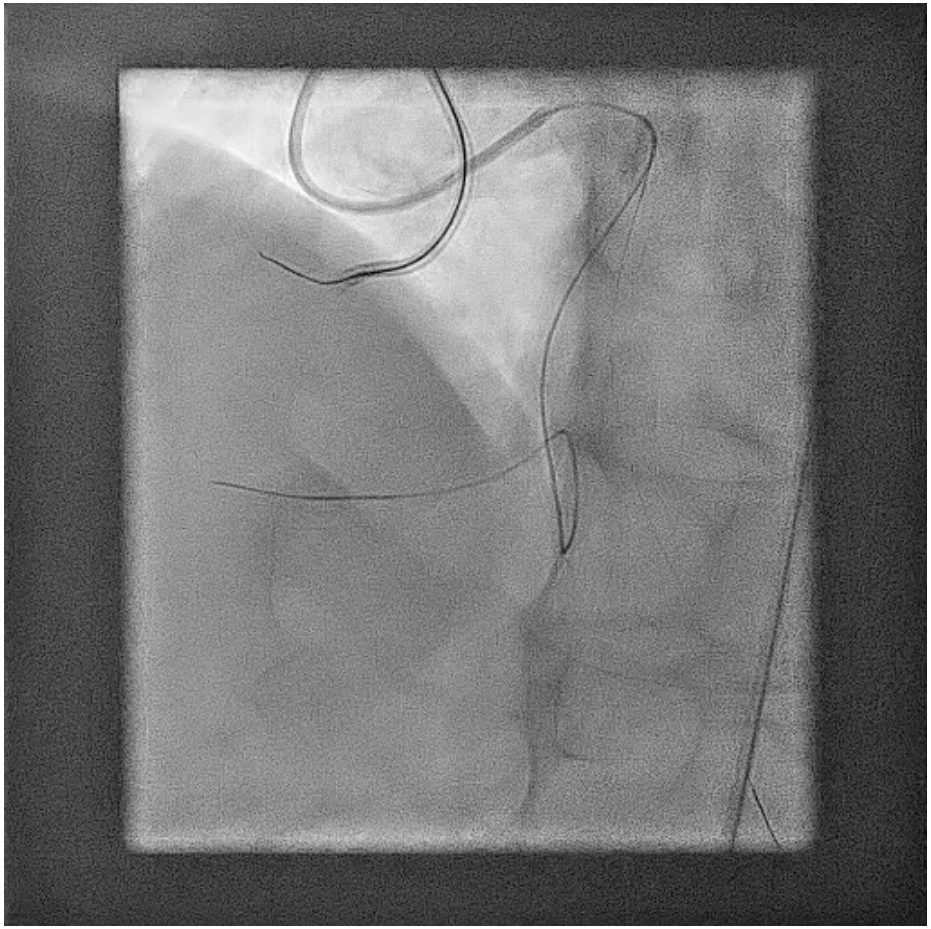

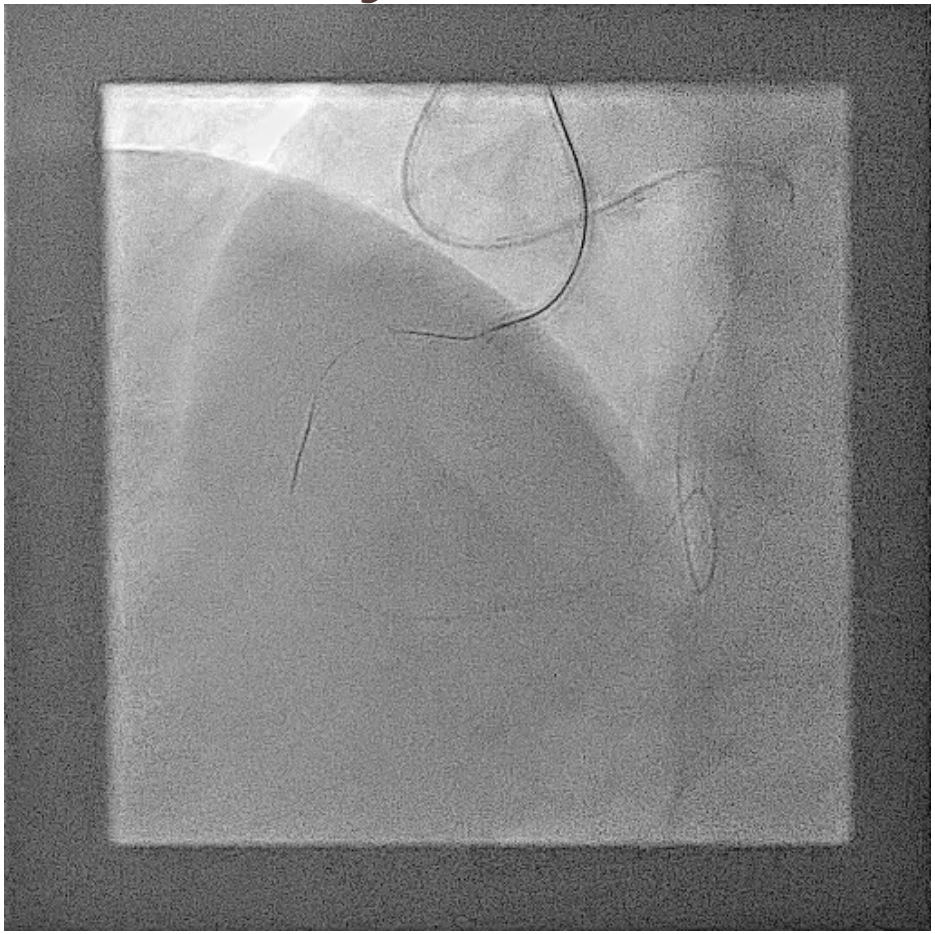

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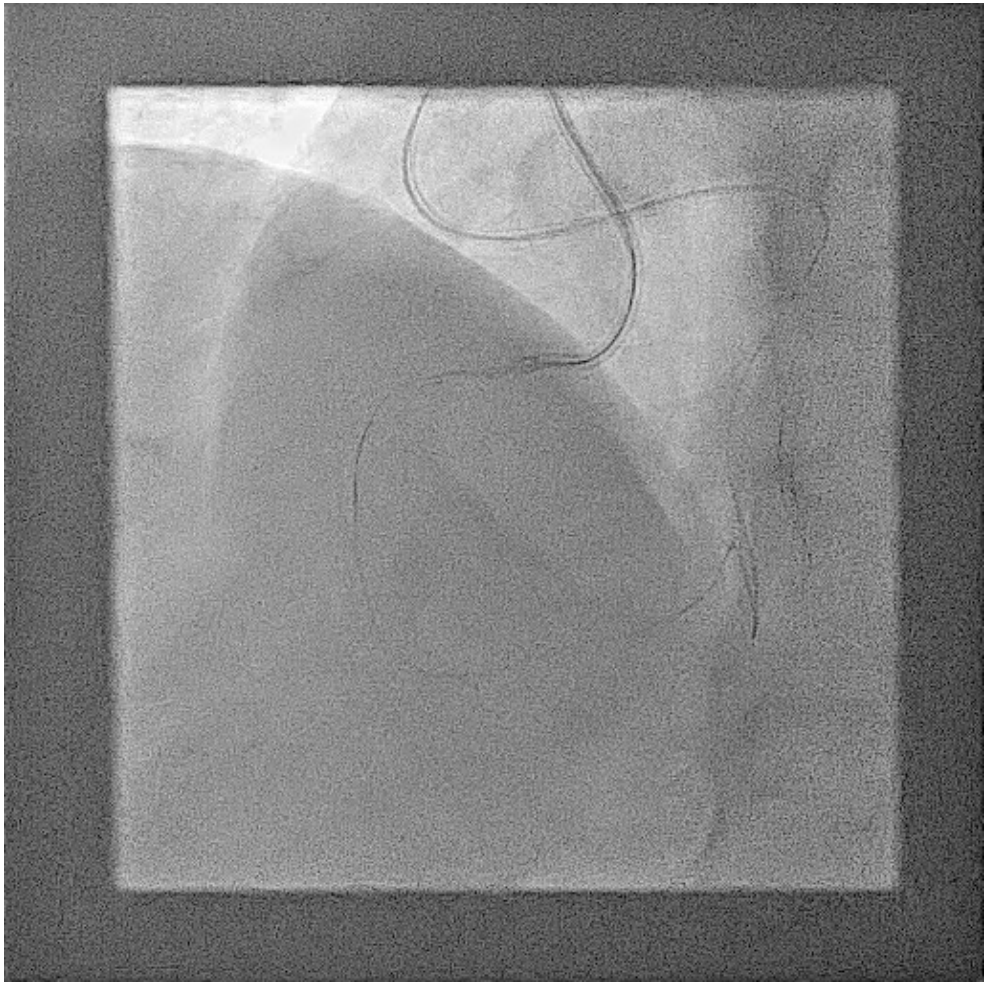
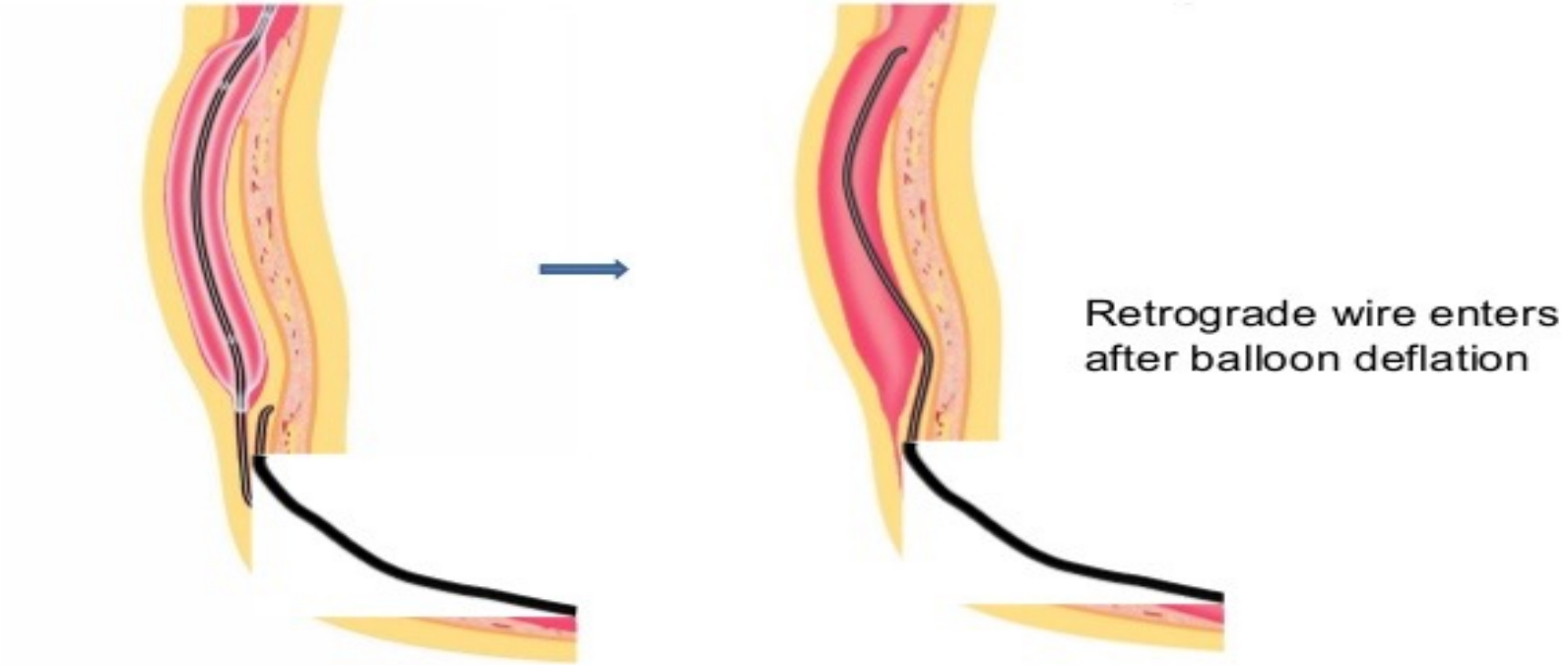


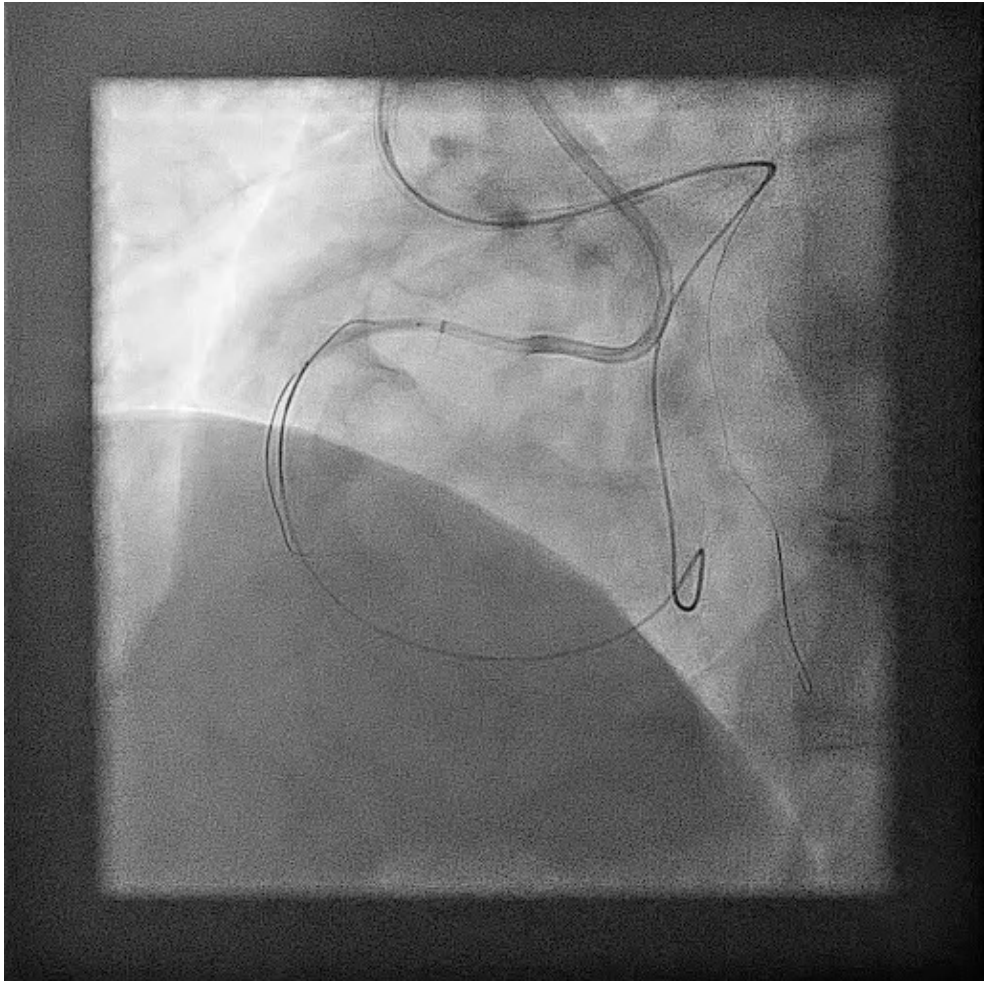
Reverse CART: Balloon dilatation from antegrade



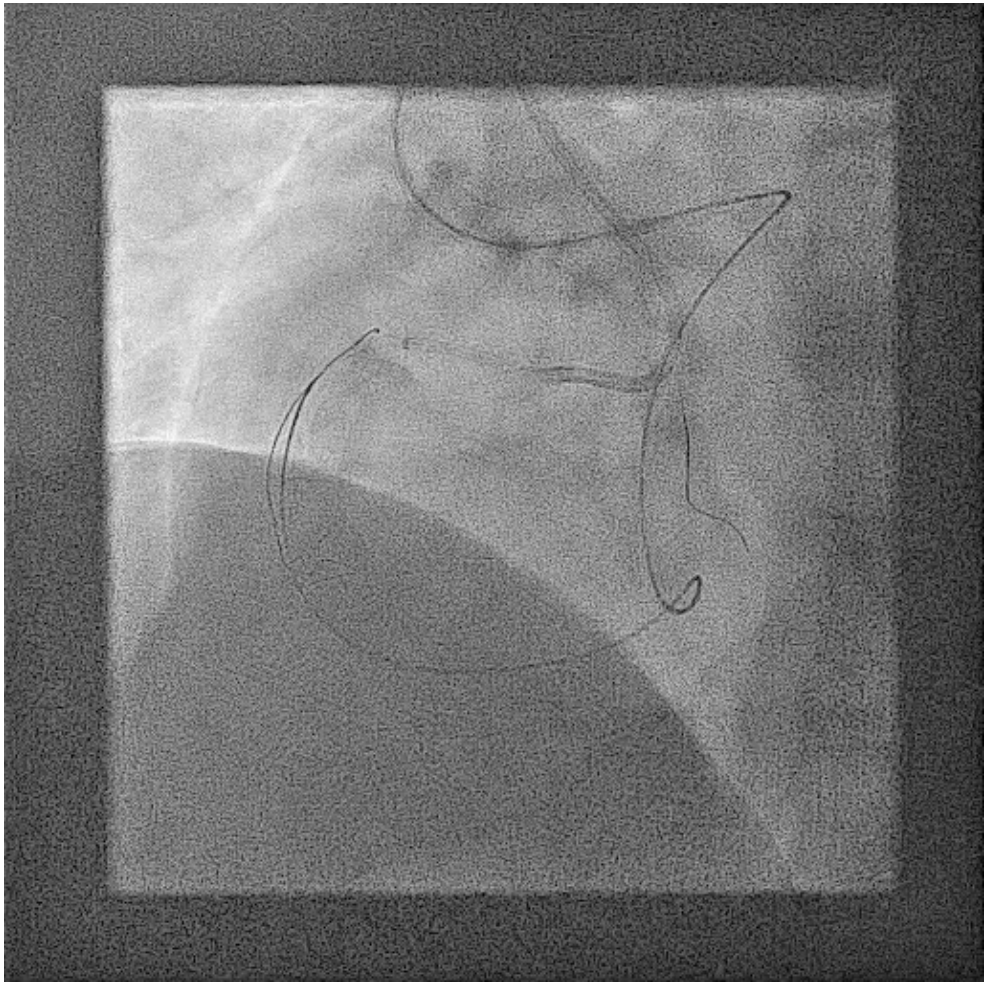
Retrograde wire enters after balloon deflation

Modified from M. Ochiai

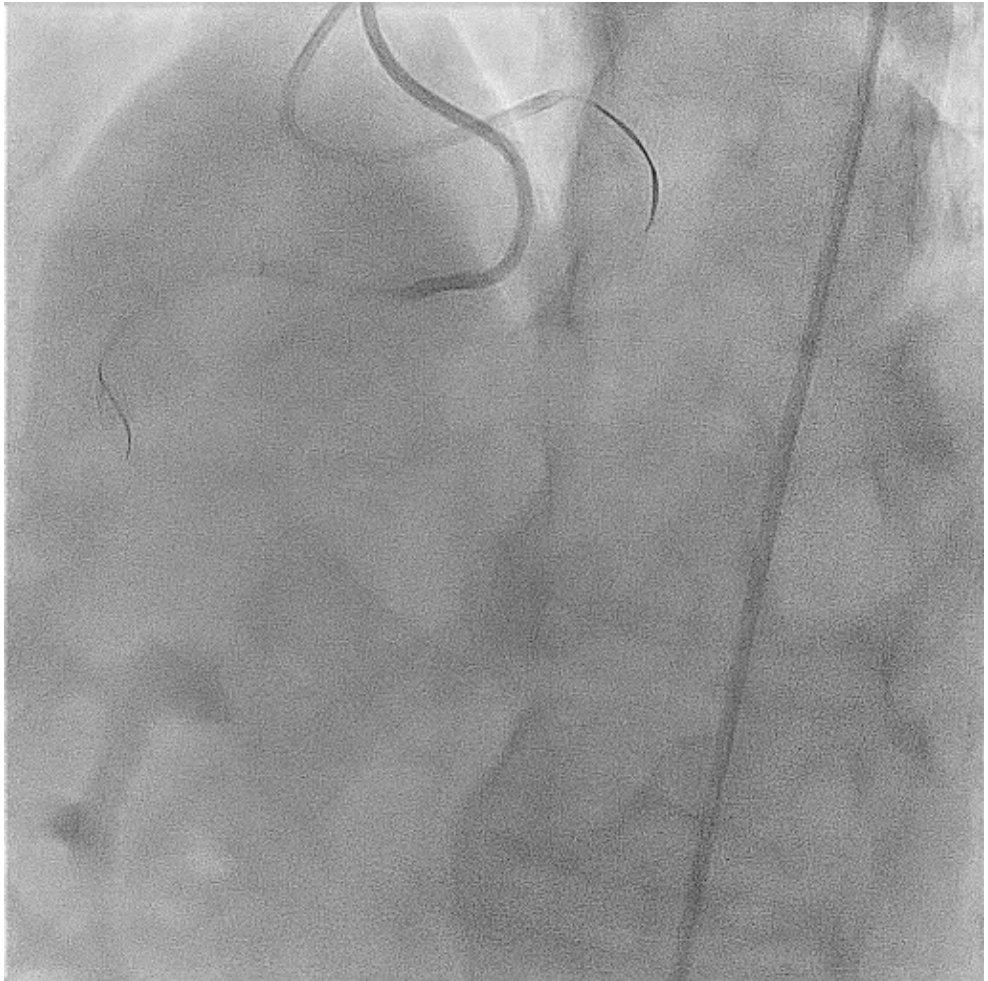
Retrograde dissection and reentry



Retrograde dissection and reentry

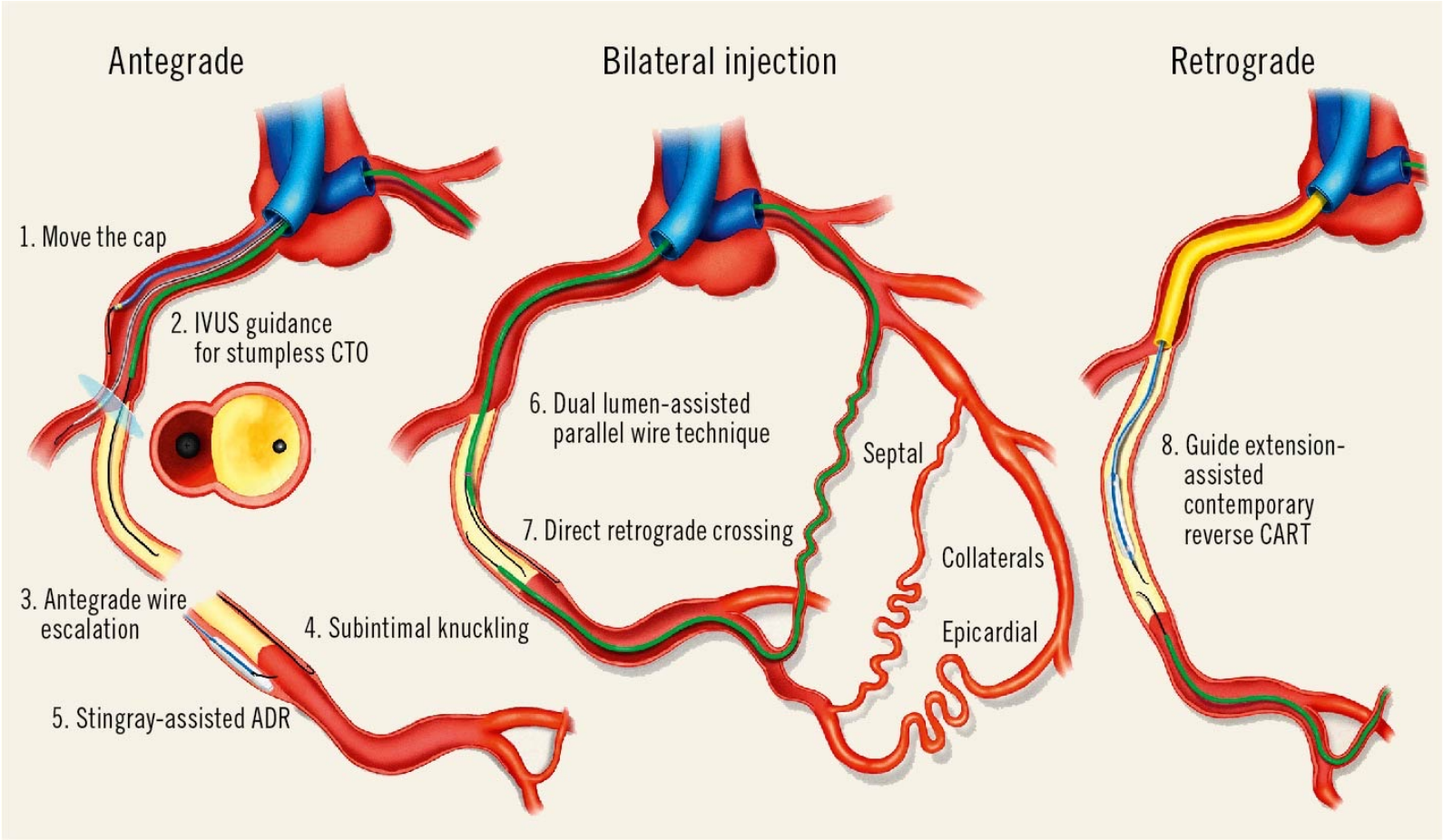


Retrograde dissection and reentry



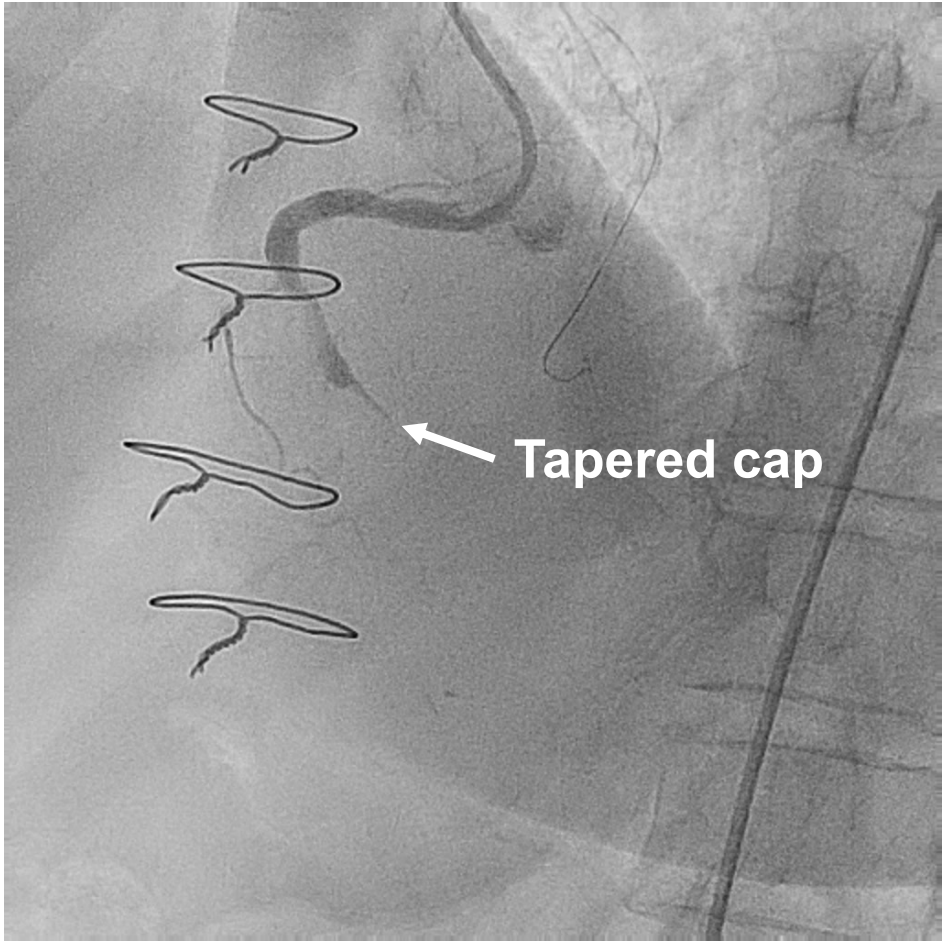
Wat bepaalt strategie?

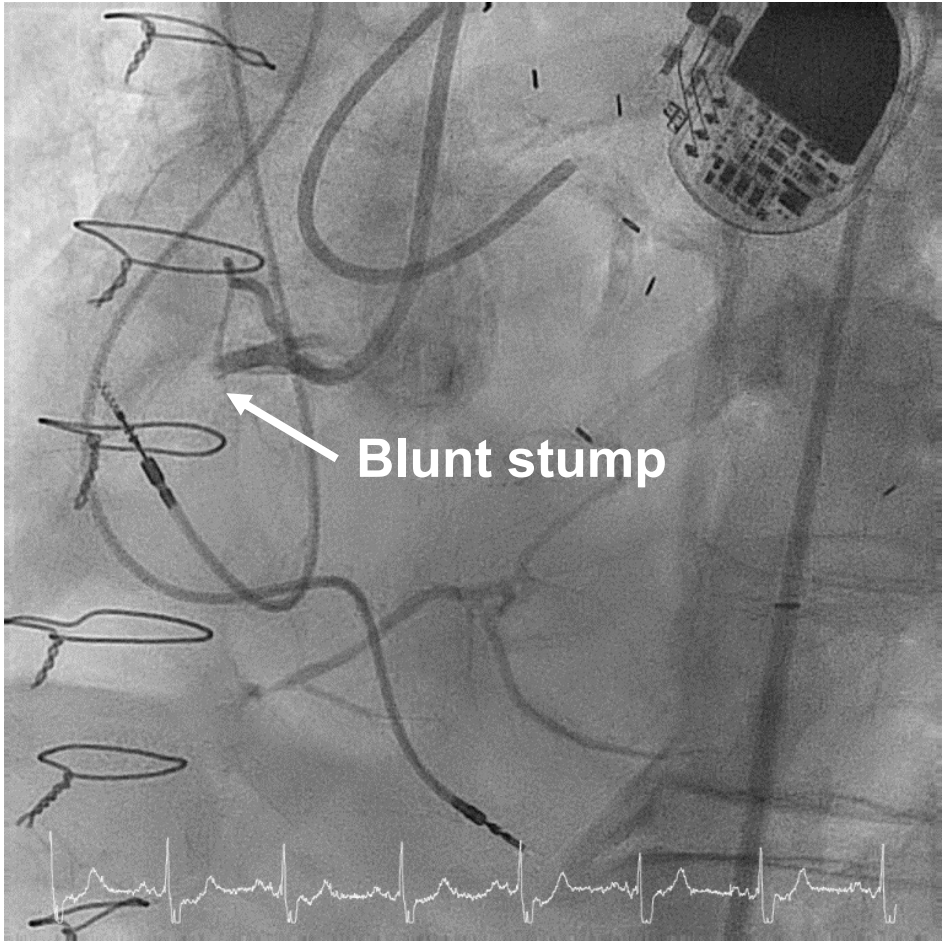
1. Proximale cap
2. Lengte van occlusie
3. Distale landingzone
4. Interventionele collateralen



C Di Mario et al. Eurointevention 2022

Proximale cap



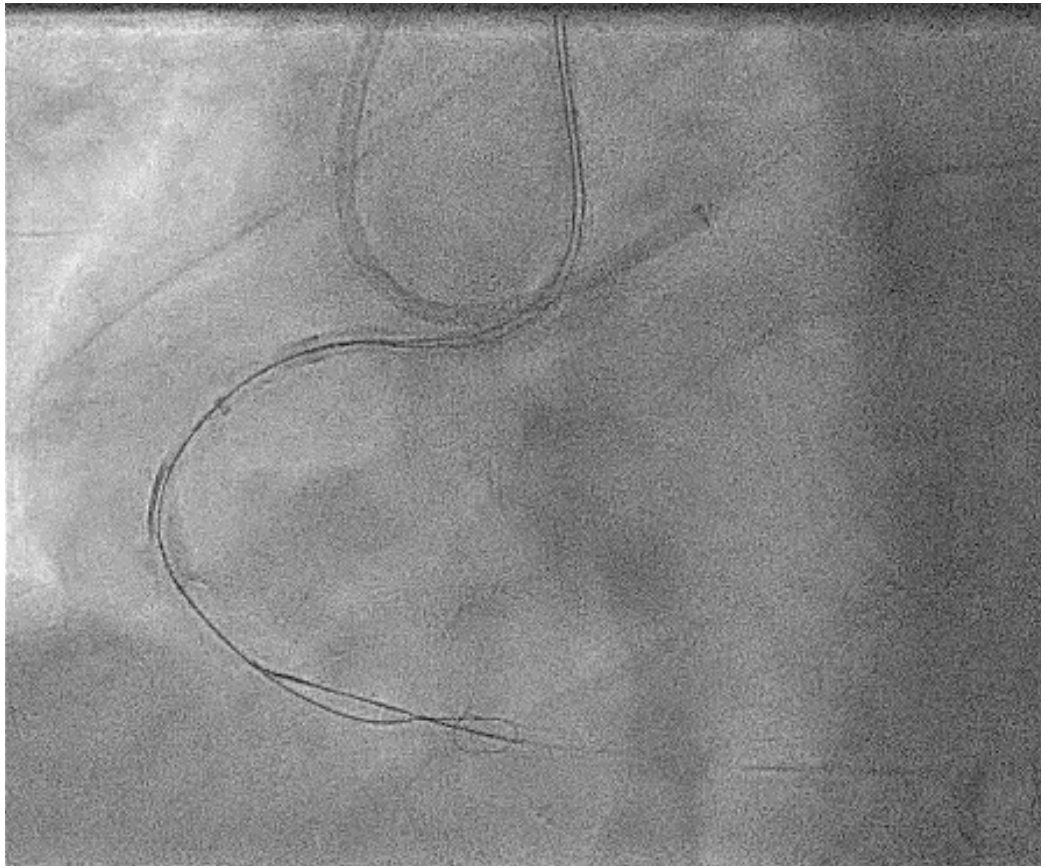


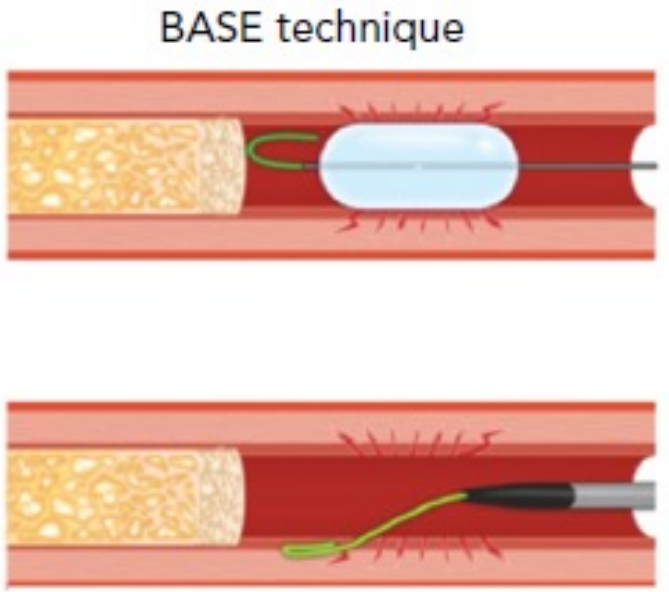
Proximale CAP

“make it or break it”

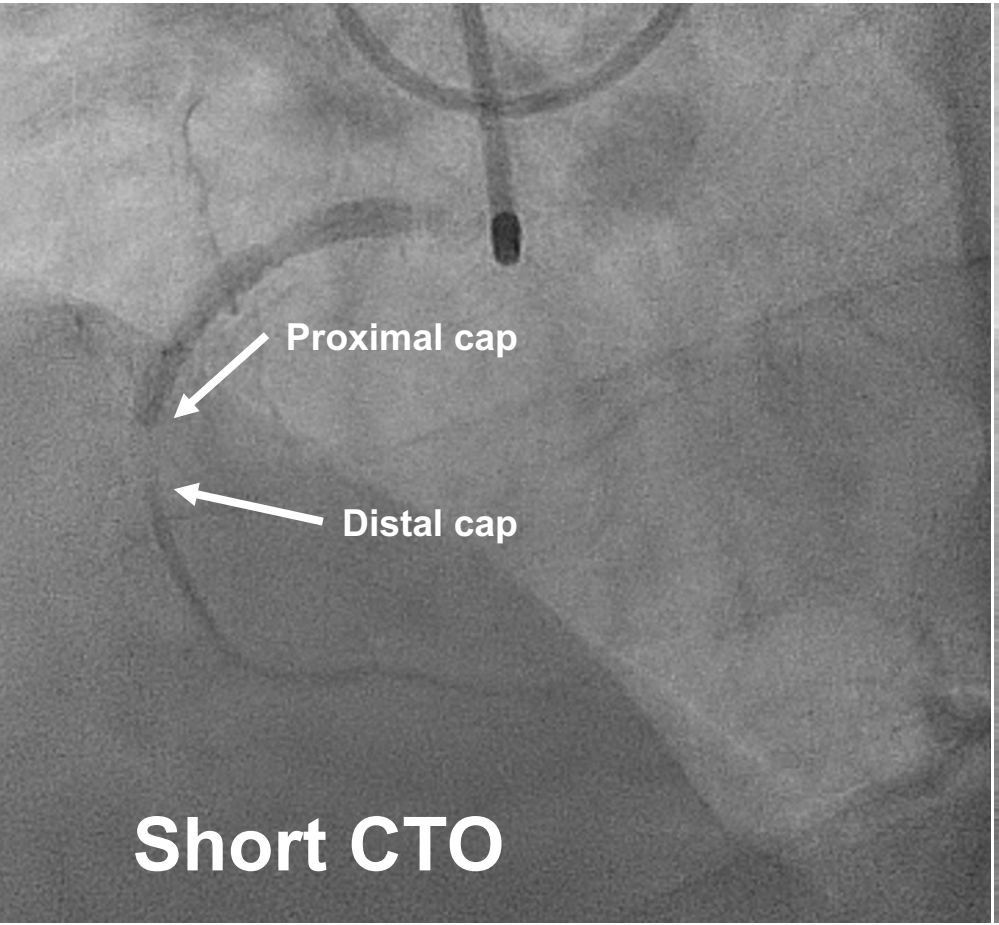
- BASE
- Grenadoplasty
- Carlino

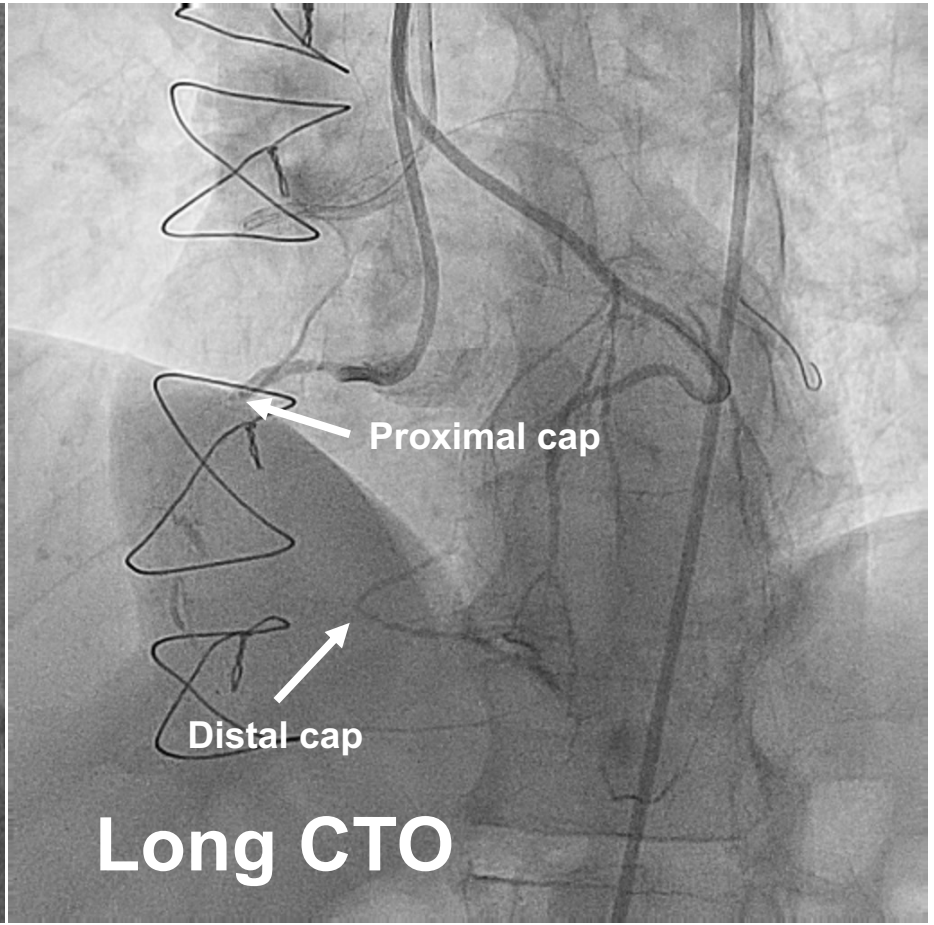
Proximale CAP



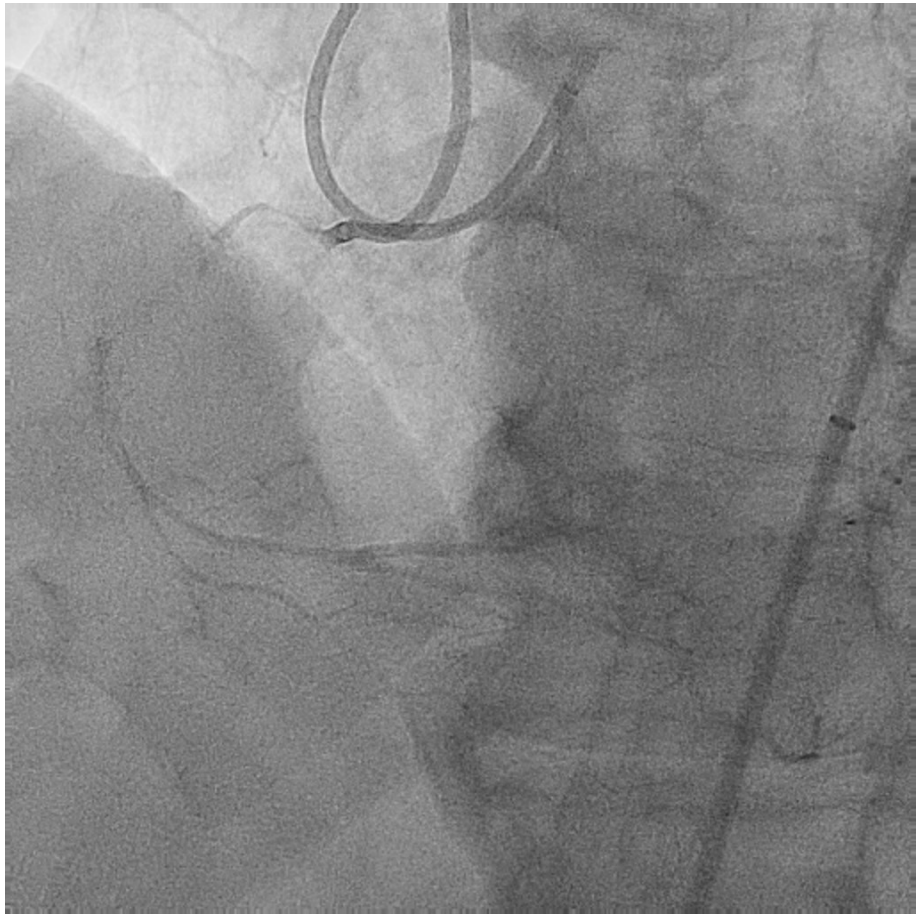


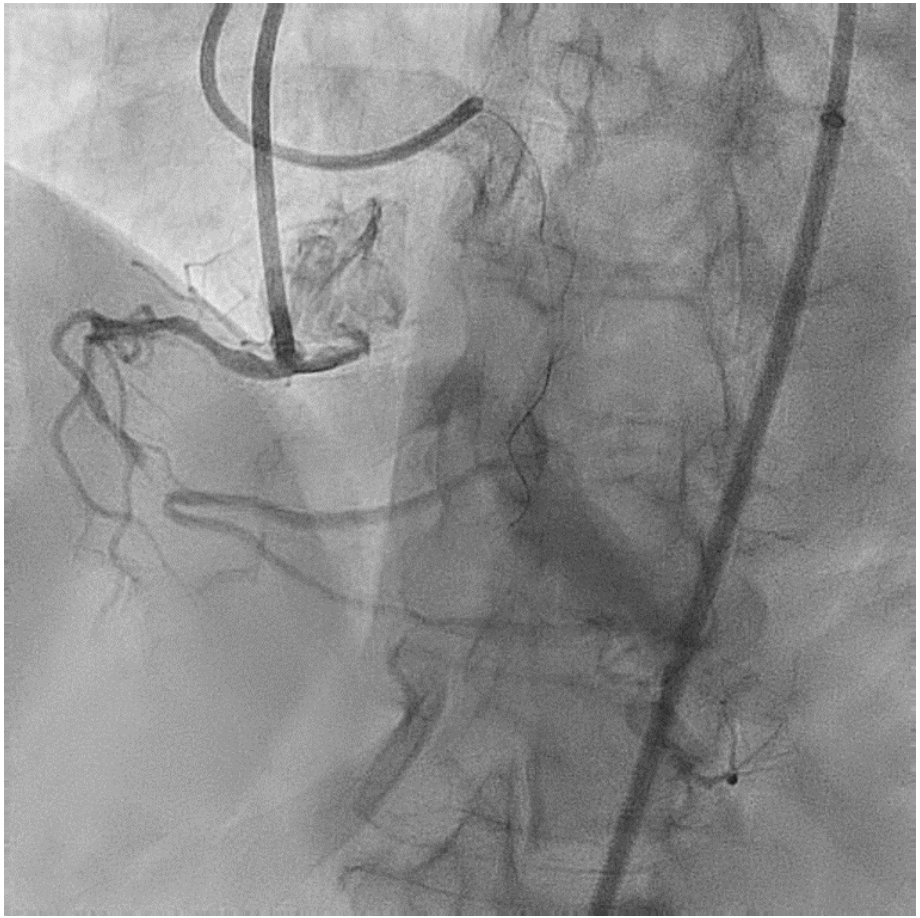
Lesie lengte

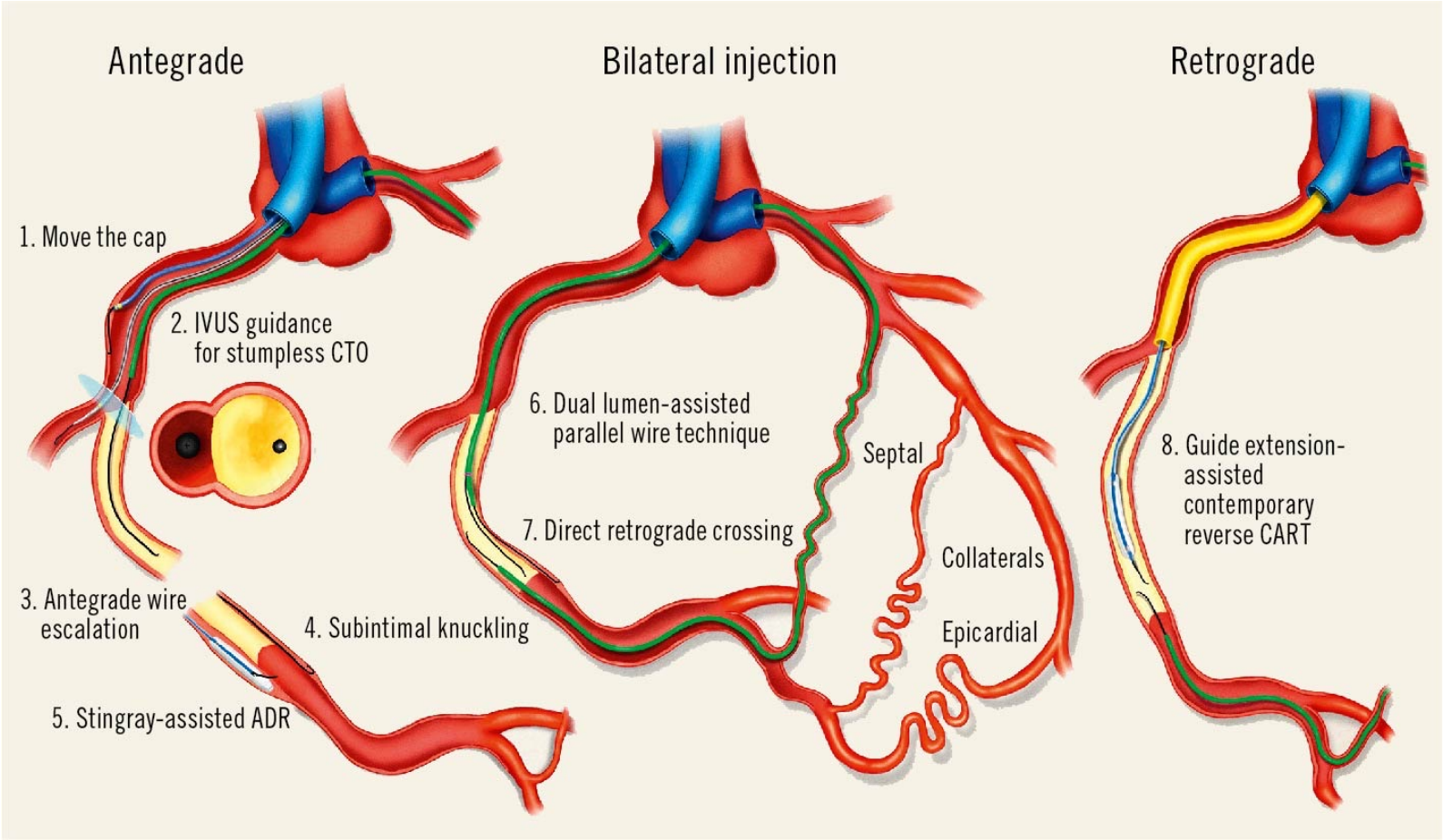




Distale landingzone

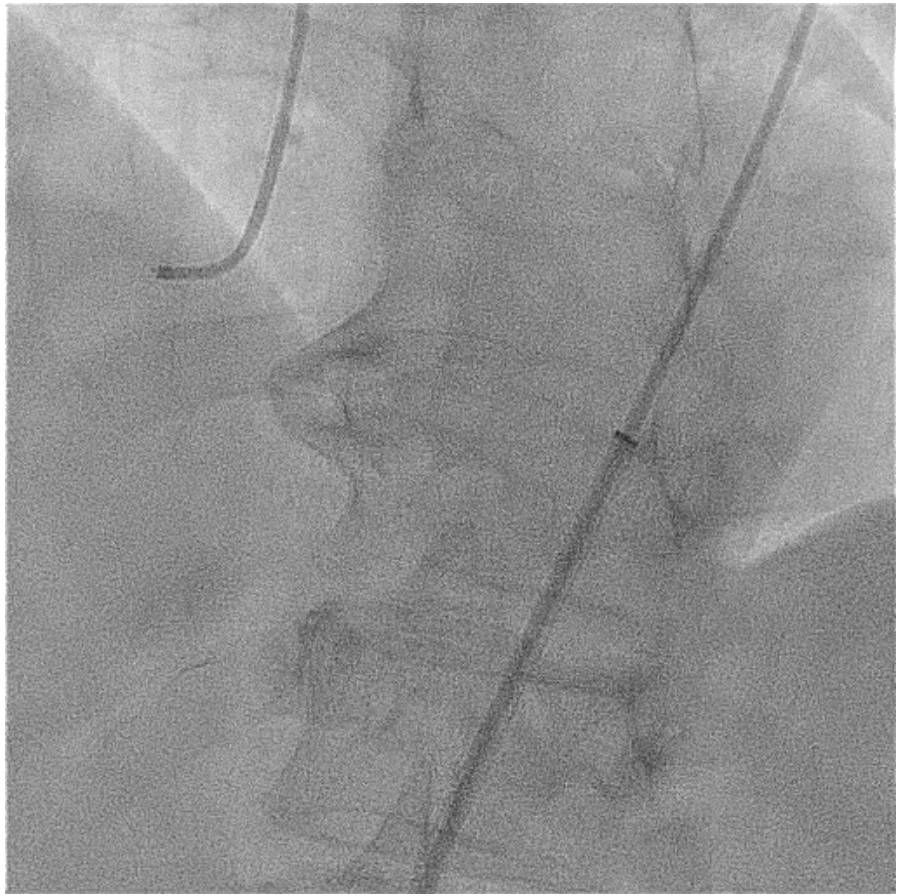


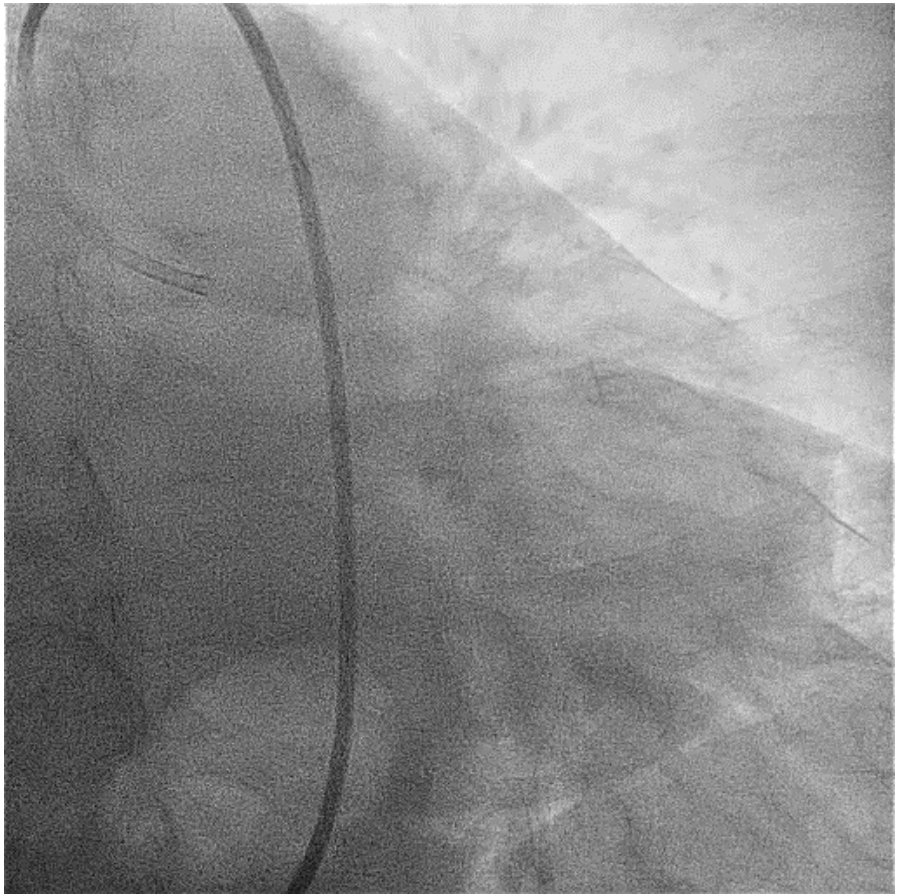




C Di Mario et al. Eurointevention 2022

Geen interventionele collateralen





CASUS

Man 79 jaar

Voorgeschiedenis

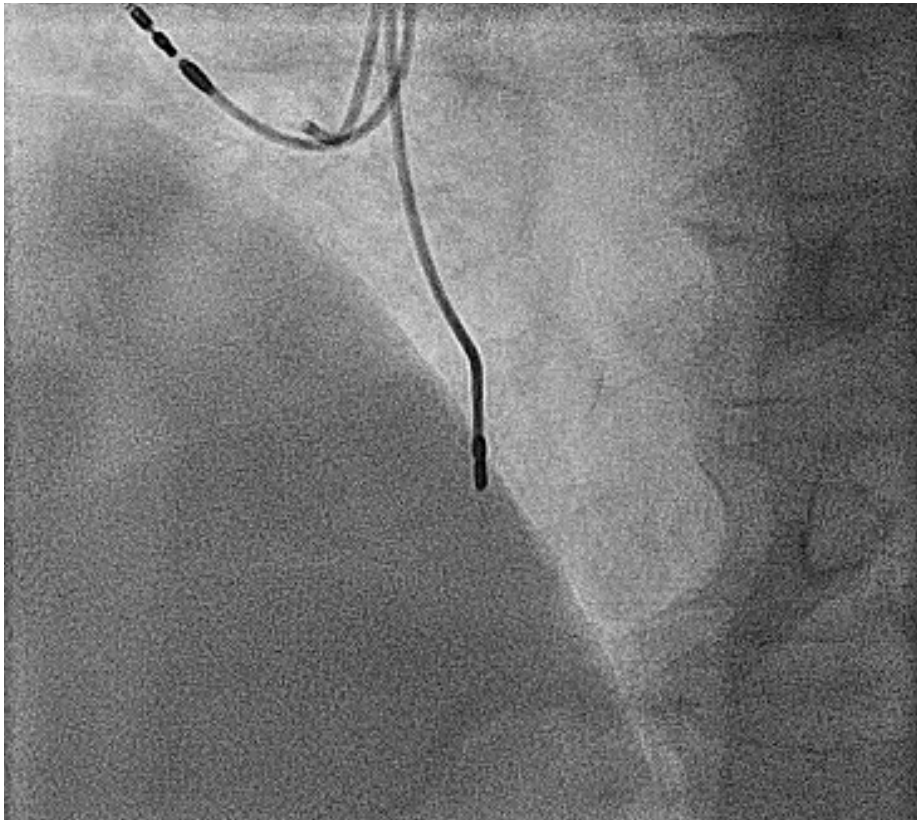
- Ischemische cardiomyopathie, LVEF 20%
- CRTD
- Perifeer vaatlijden EVAR
- Prostaatcarcinoom stabiel

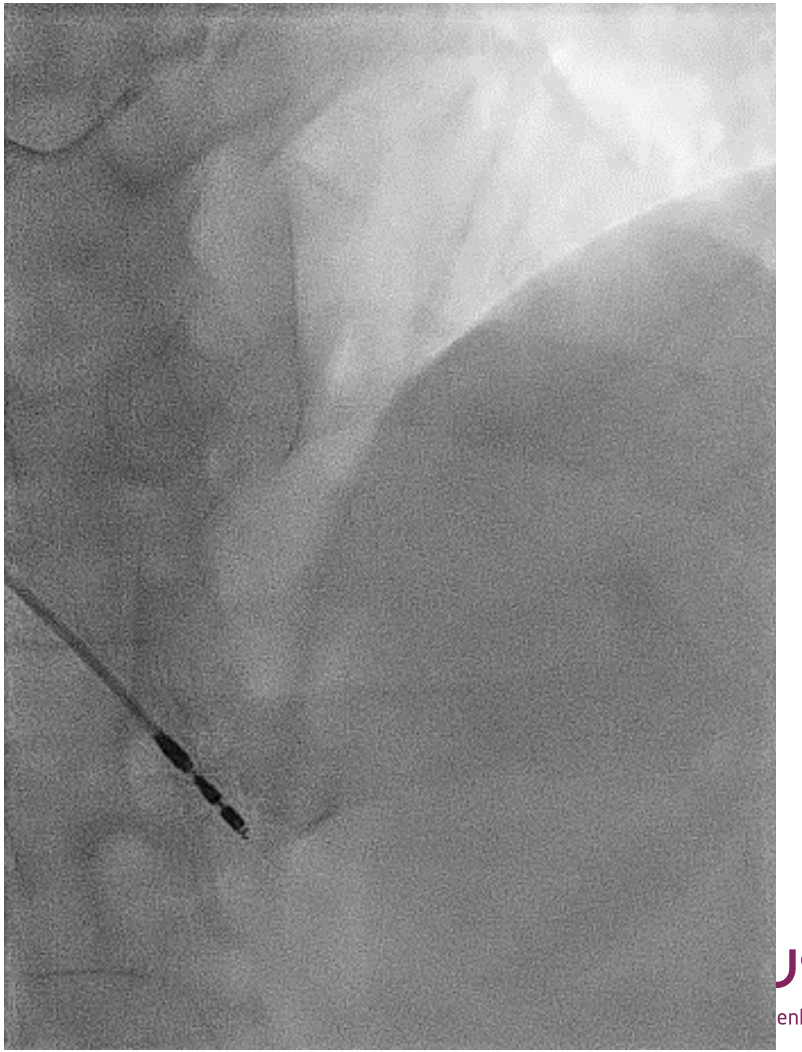
Invaliderende dyspnoe en angina pectoris

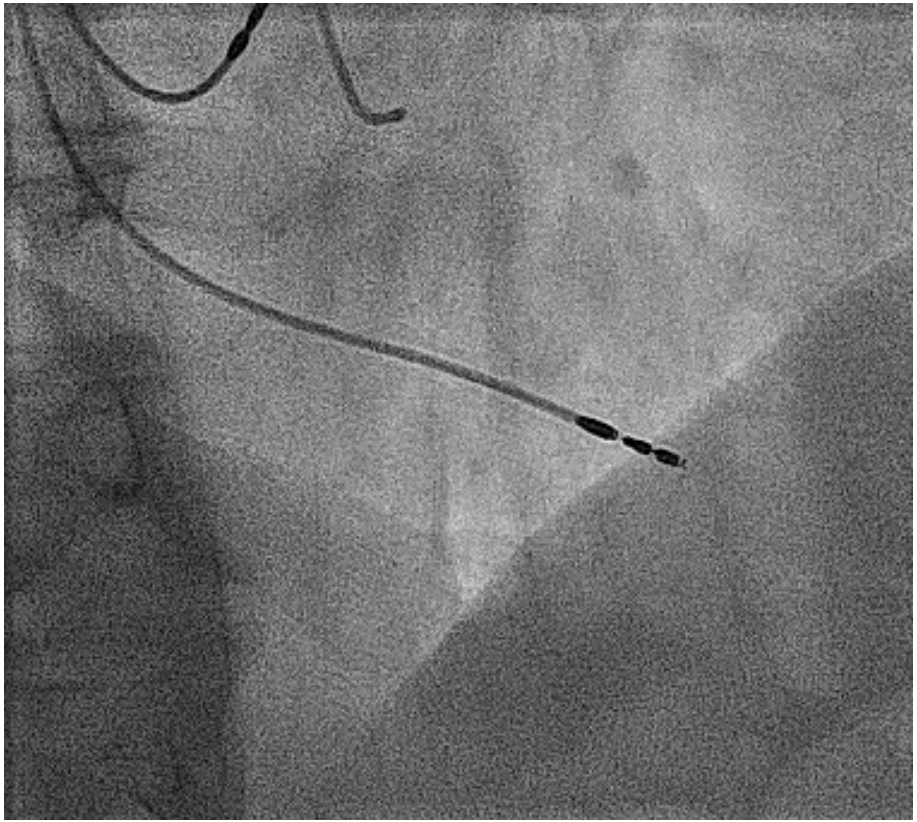
MPS: belangrijke ischemie inferior (reversibel defect)

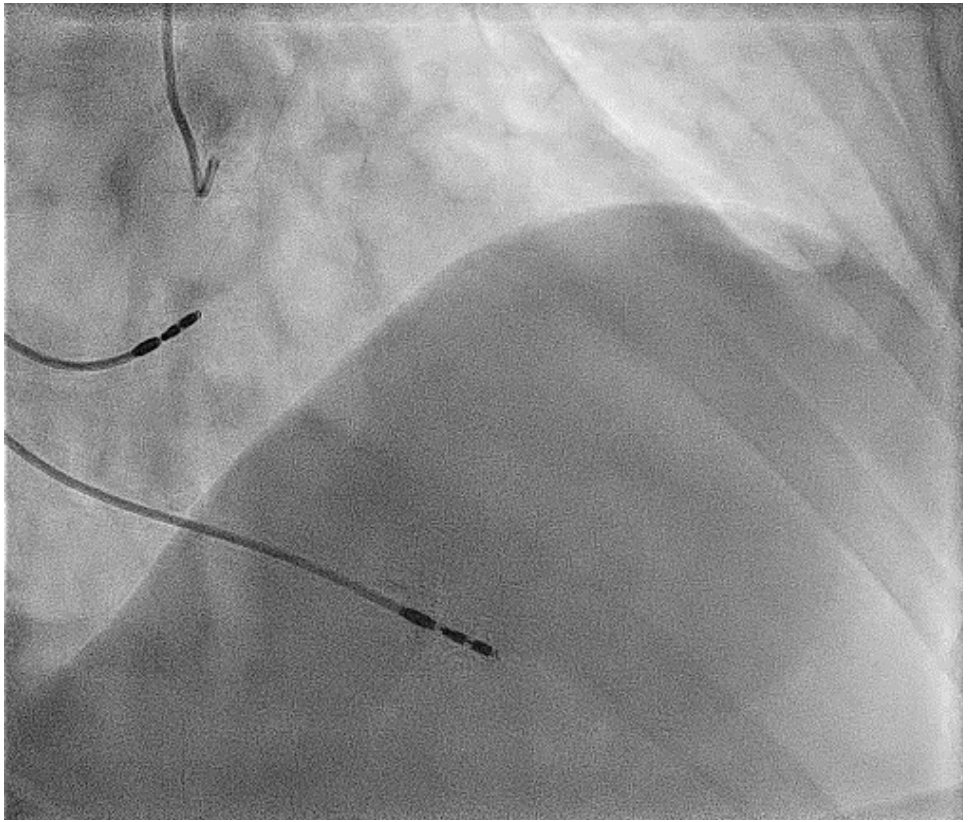
Irreversibel defect anterolateraal

BASELINE ANGIO









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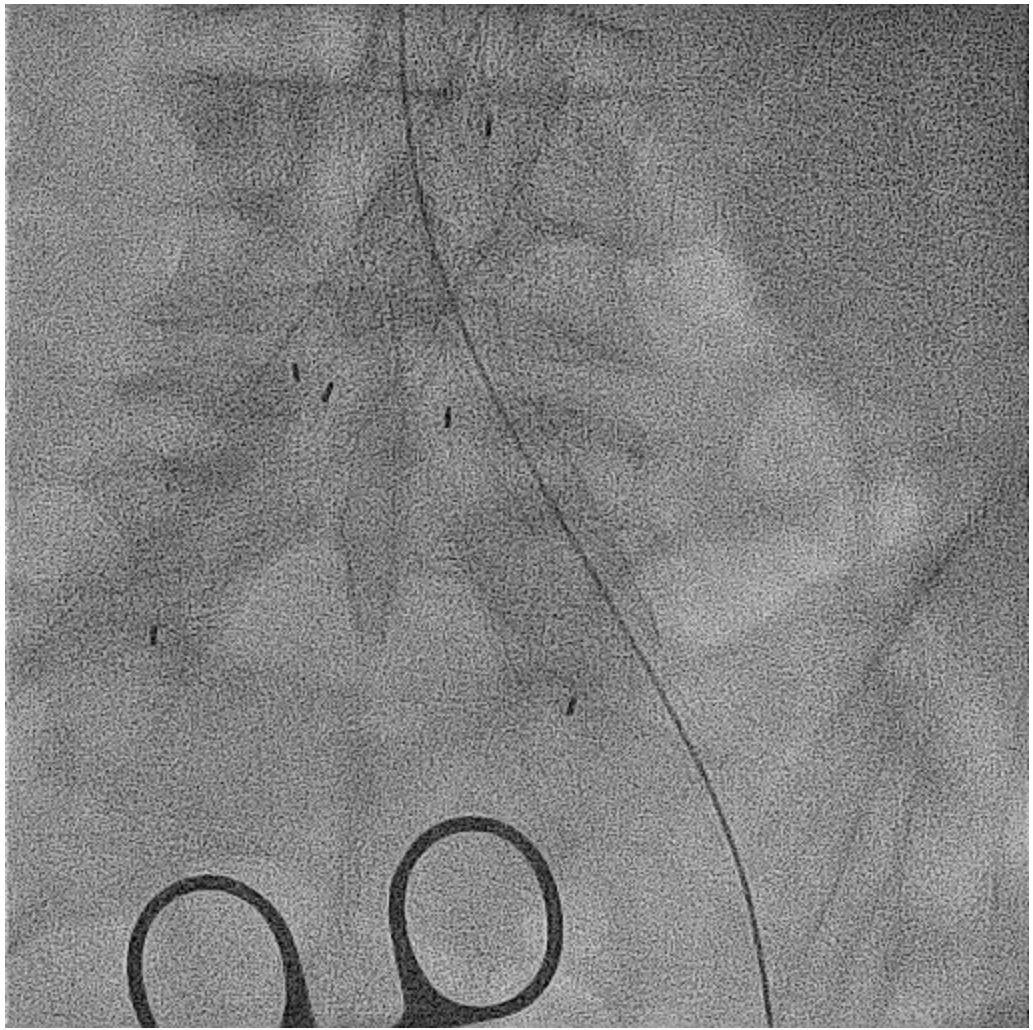
SETUP

SI VIS PACEM, PARA BELLUM



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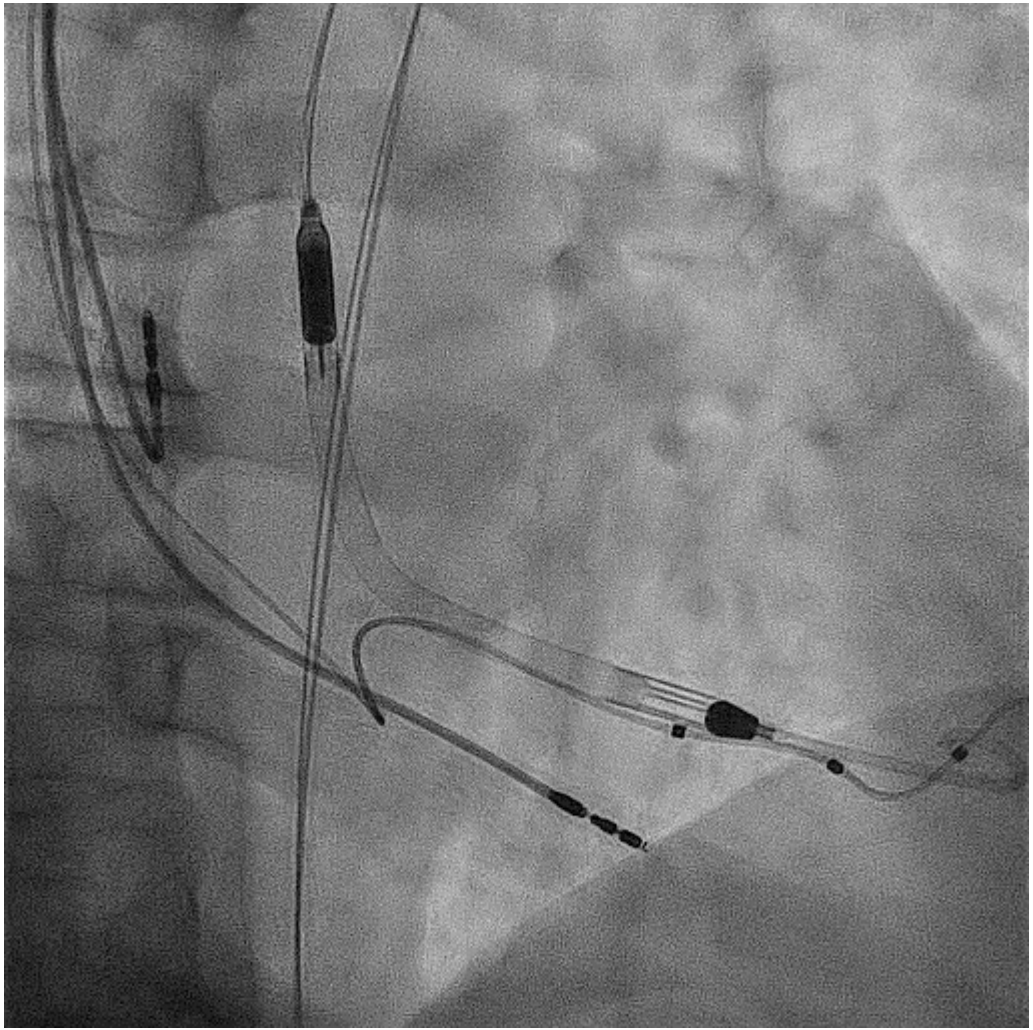

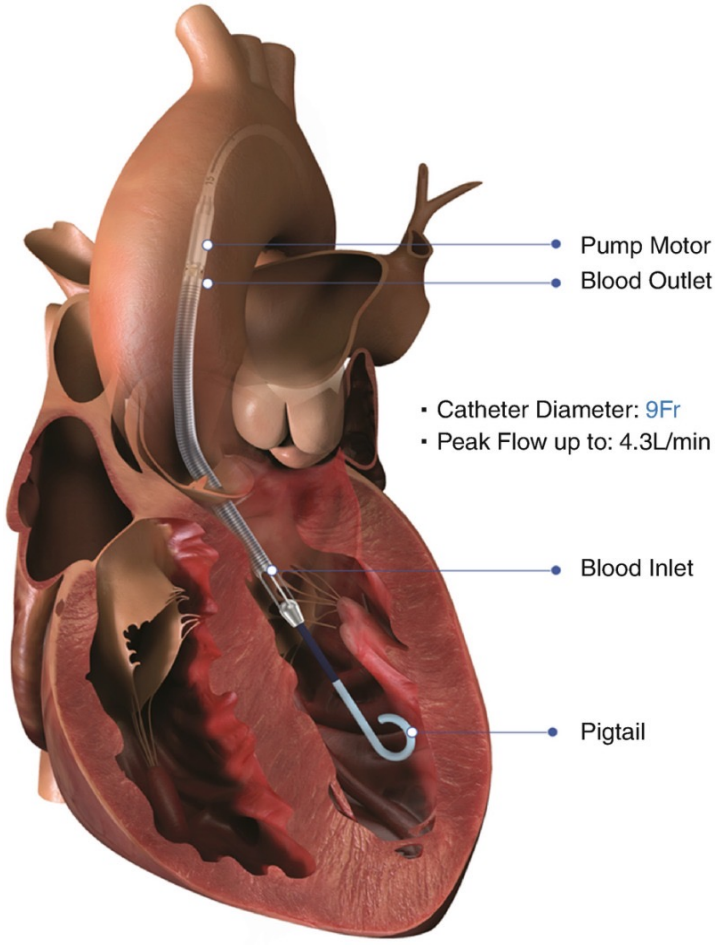

- Catheter Diameter: 9Fr
- Peak Flow up to: 4.3L/min

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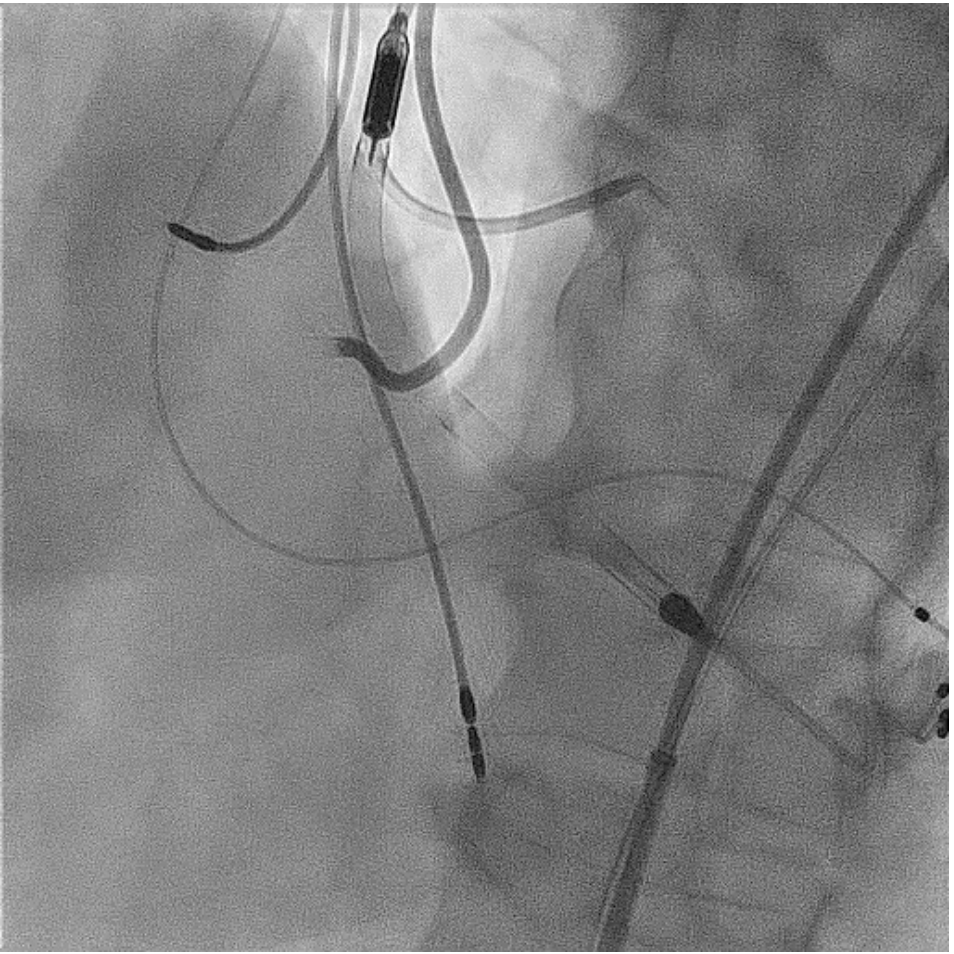

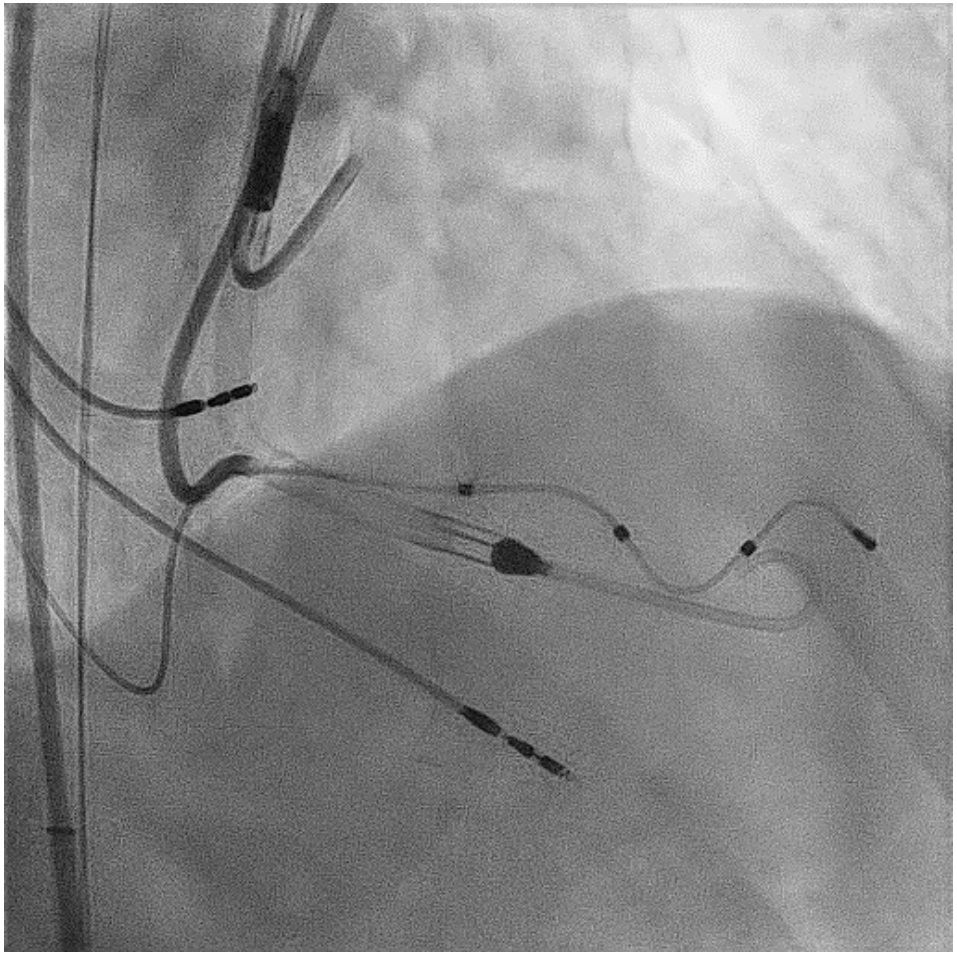

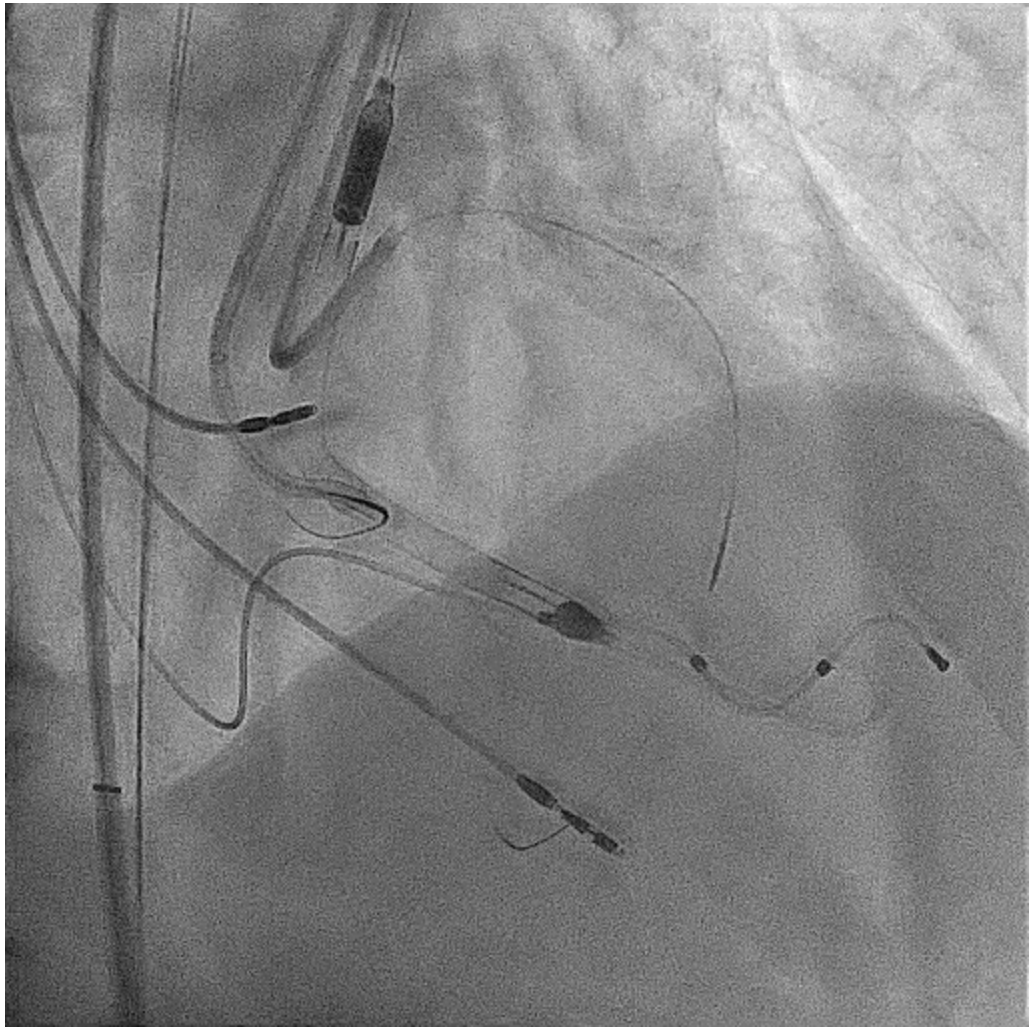

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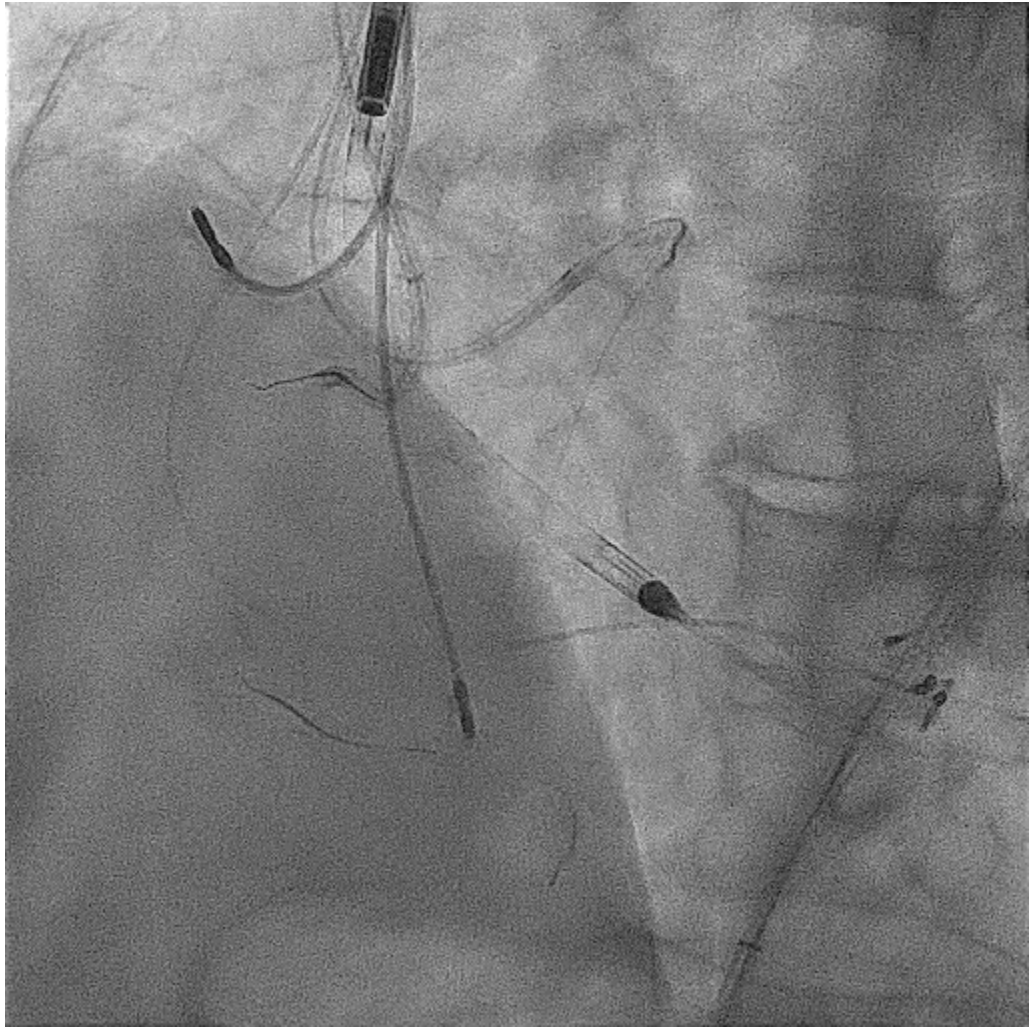

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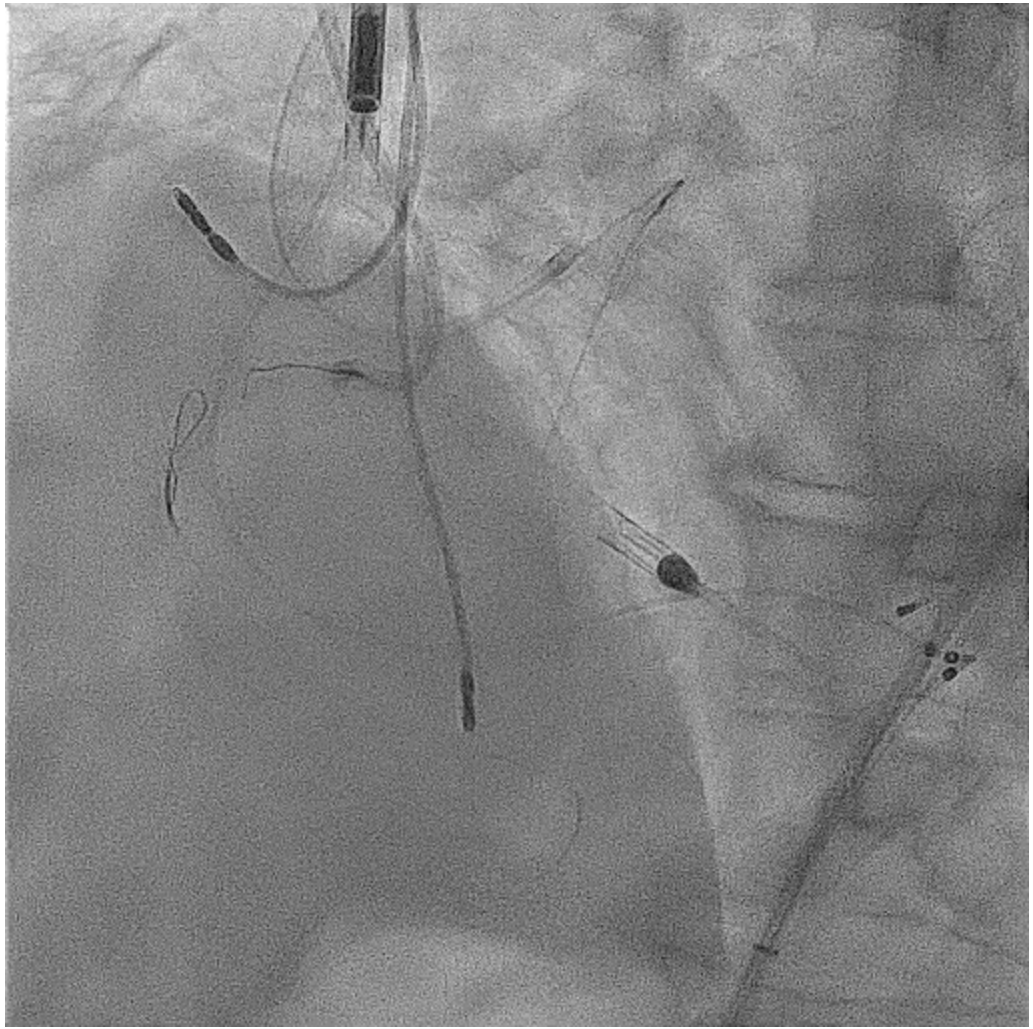

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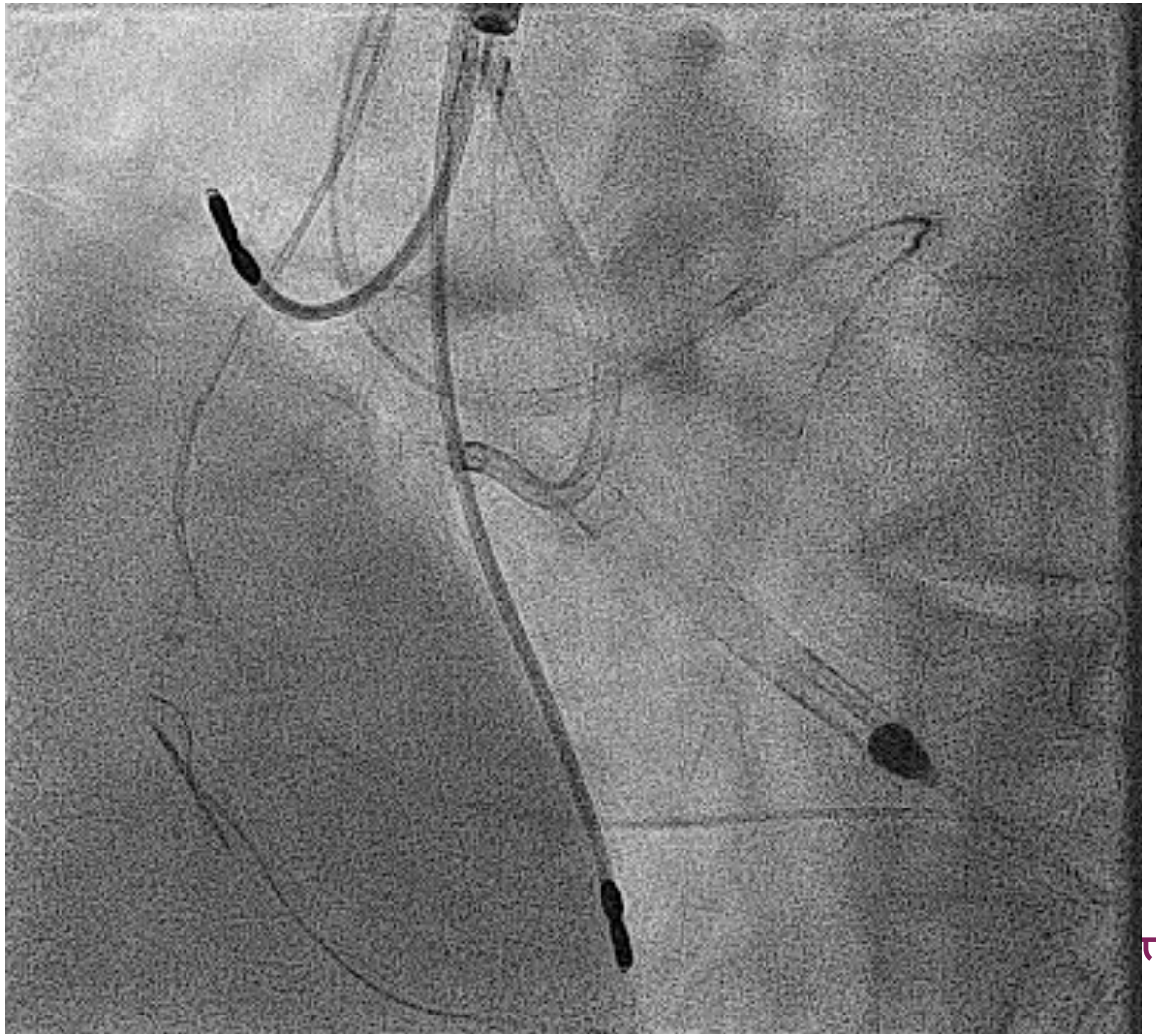

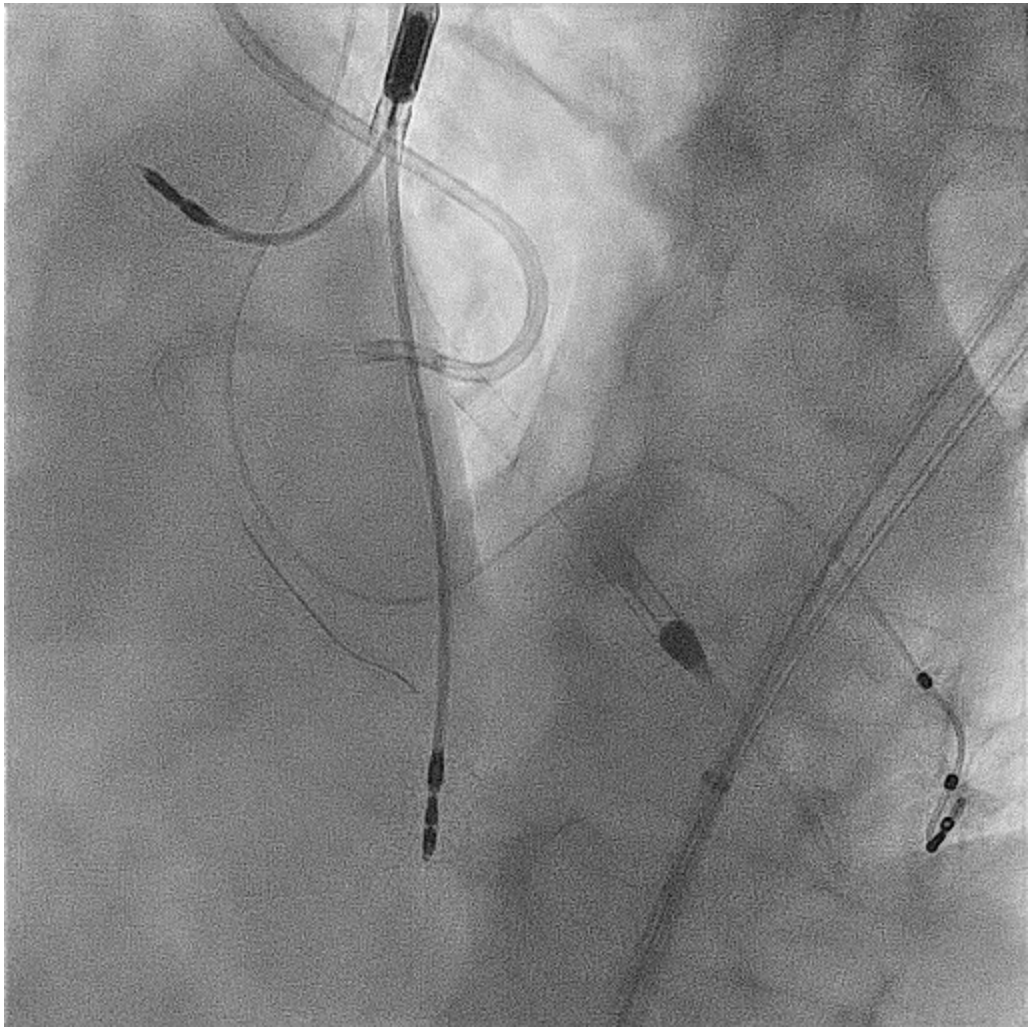

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CTO PCI – Take Home Messages

Relatief hoog risico PCI

Goede indicatie essentieel

Hoge succeskans >90%

Anatomie is geen beperkende factor meer

DANK U

St Antonius