

# Que peut-on faire de plus pour la voie radiale en 2016?

**Benjamin Faurie, MD**

**Cardiovascular Institute  
Hospitalier Mutualiste de Grenoble  
FRANCE**



# Potential conflicts of interest

**Speaker's name: Benjamin Faurie**

**I Have the following conflicts of interest to declare:**

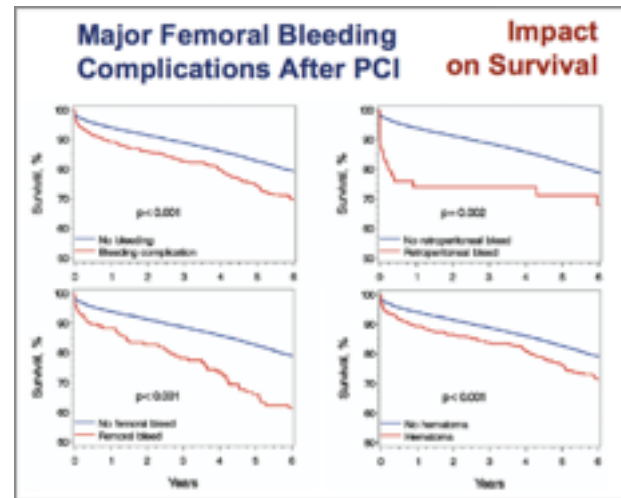
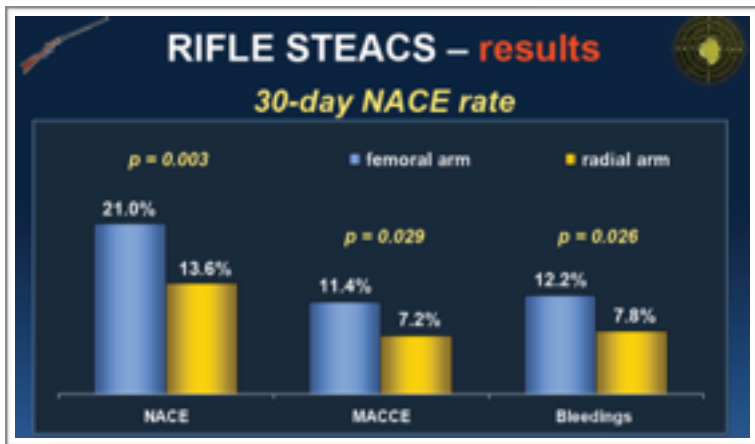
**Biotronik, Cordis : consultant fees**

**Boston Scientifics : proctoring for CTO interventions**

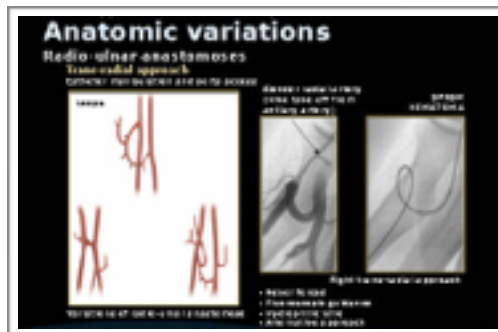
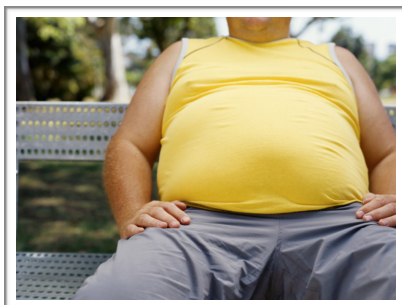


# Background n°1: TRA decrease complications and...

- TRA is **Safe**, decrease **Vascular Complications** and... **Mortality** !  
 Especially in **high risk patients** : ACS, Old, Obese, Frail ...

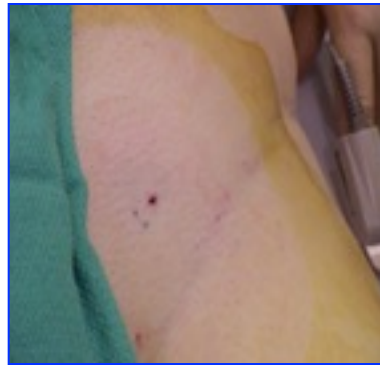
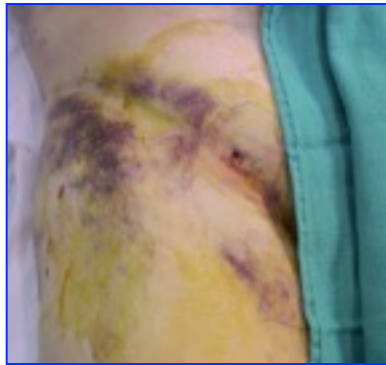


- **but...** (Paradox n°1) : TRA can be **challenging** !



# Background n°2 : TRA needs small $\varnothing$ GC

- **Decreasing GC diameter:-** decreases **vascular complications** for TFA
  - decreases **Radial Artery Occlusion** rate for TRA



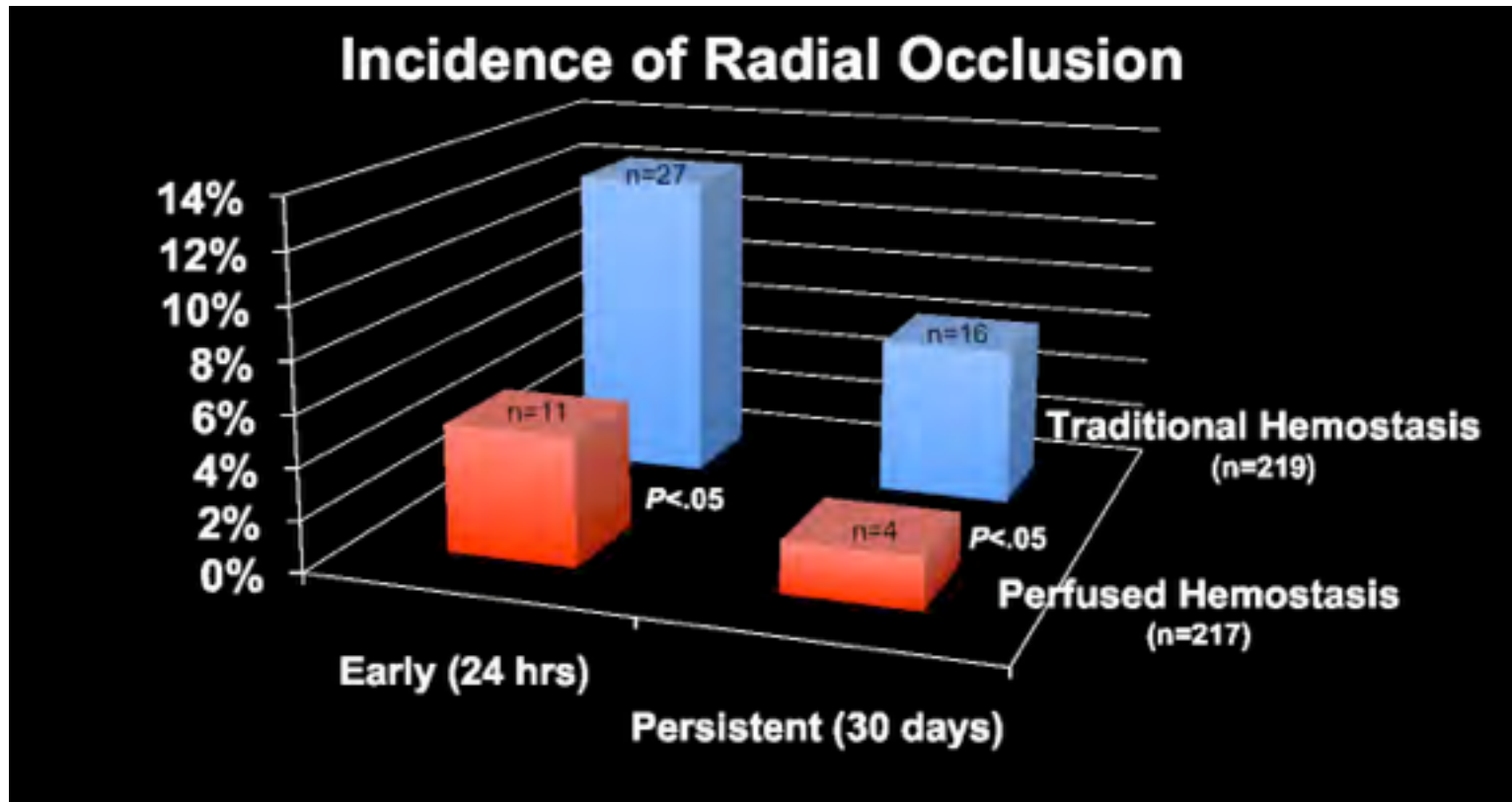
- **But...** (Paradox n°2) : small catheter diameter **limits backup support** & possibilities for **Complex PCI** (Rotablator, CTO, LM bifurcation)



# Background n°2 : TRA needs small $\varnothing$ GC



# Background n°2 : TRA needs small $\emptyset$ GC



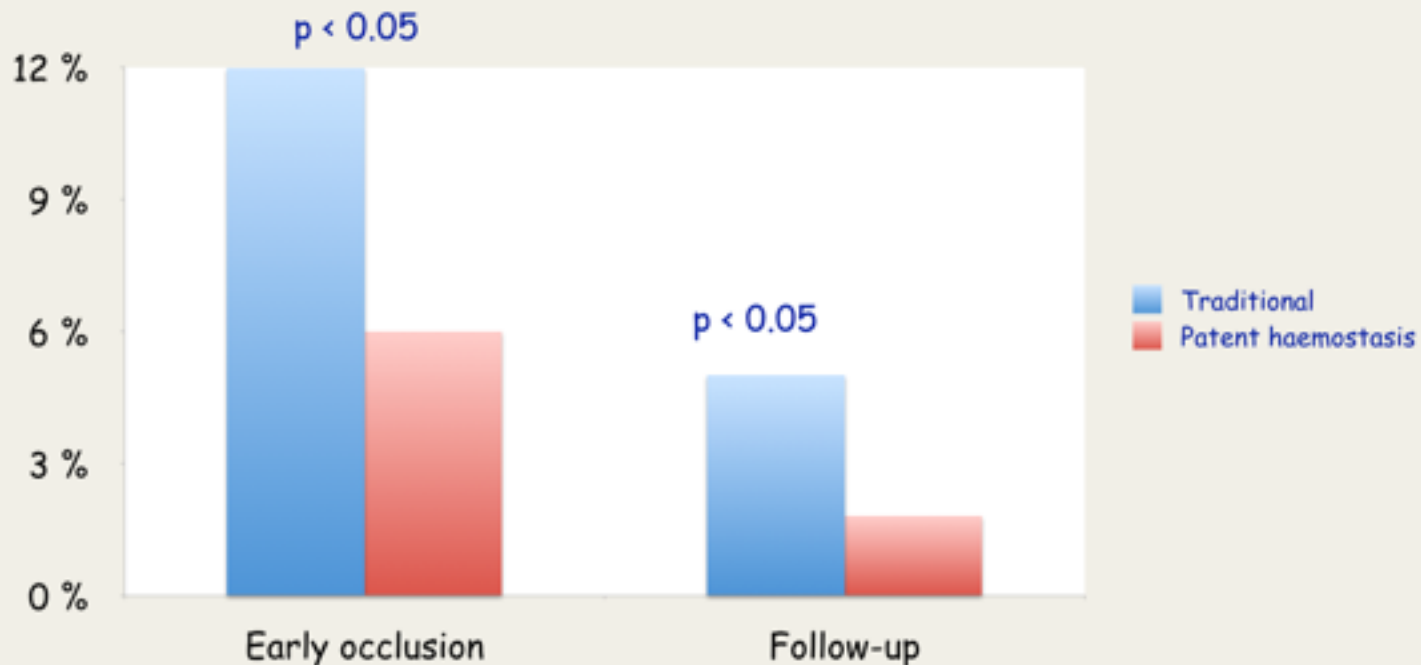
## Background n°2 : TRA needs small $\emptyset$ GC

# PROPHET Study

- Randomized evaluation between conventional compression and monitoring compression
- Using Hemoband®
- 436 patients
- Radial artery patency at 24 hr and 1 month
- Barbeau's test with oximeter

# Background n°2 : TRA needs small $\emptyset$ GC

## PROPHET study: results



Pancholy Catheter Cardiovasc Int 2008; 72: 335-40



# Background n°2 : TRA needs small $\emptyset$ GC

## DRABAND registry

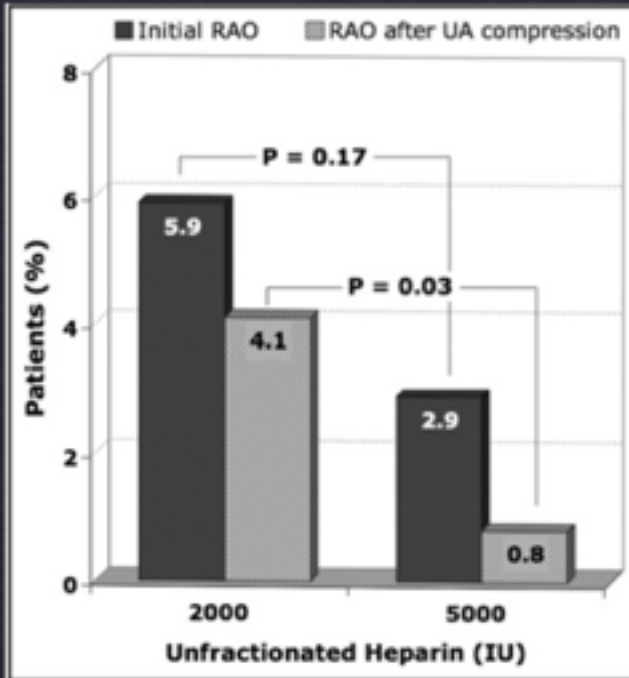
Doppler control of RAdial artery after use of TR BAND following coronarography and/or angioplasty

- Device success rate: > 95%
- Radial pulse after retrieval: 98.4%
- Radial artery occlusion rate at patient discharge: 3.8%

Occlusion predictive factors	p
Age	0.204
Wrist size	0.167
Senior operator	0.081
Female	0.623
Previous radial approach	0.022
Sheath size	0.041
Sheath type	0.001
Local complications	0.132

# Background n°2 : TRA needs small $\varnothing$ GC

## Radial Artery Occlusion



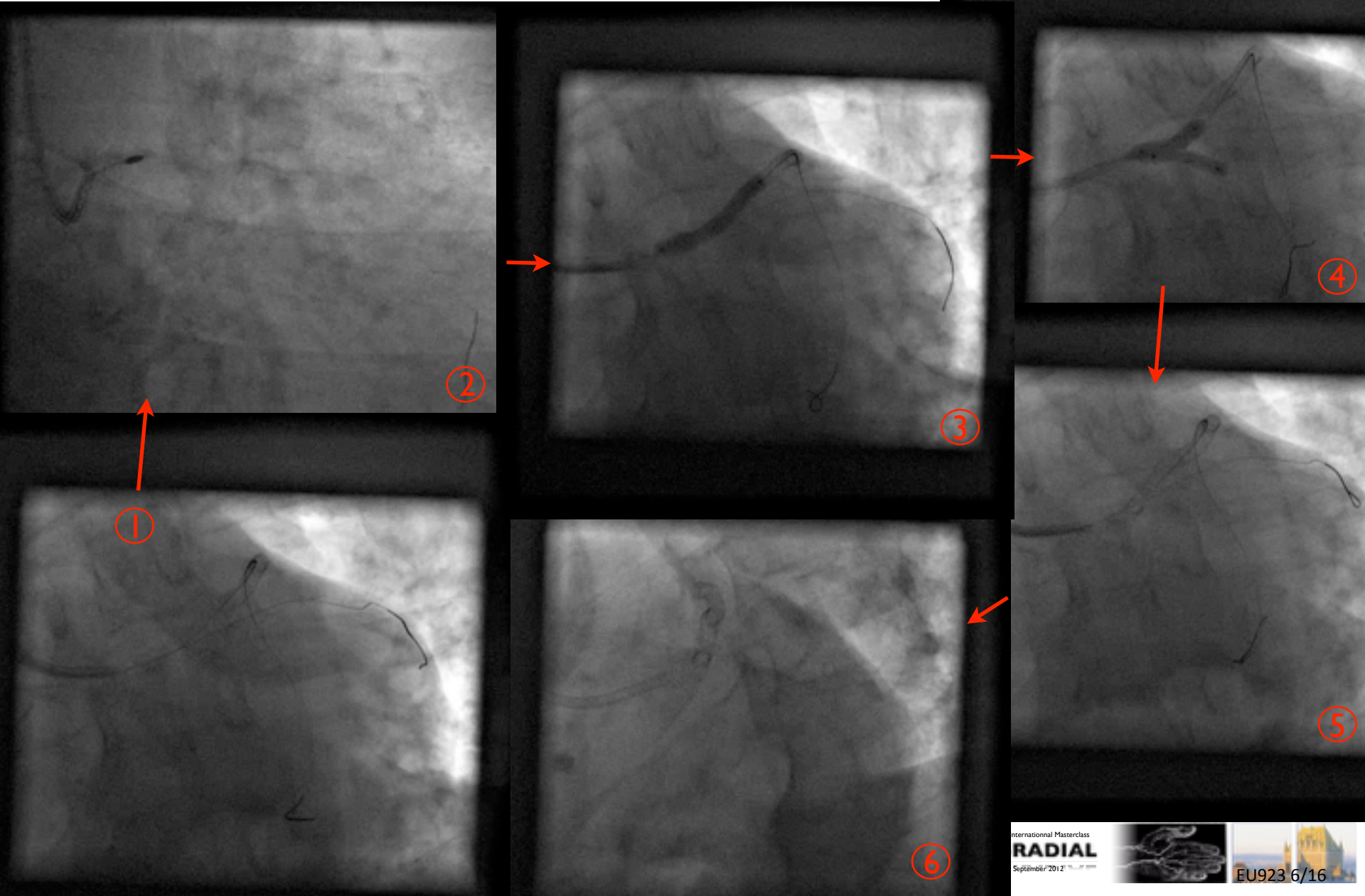
Ulnar compression

BERNAT I ET AL. AM J CARDIOL 2011 (IN PRESS)

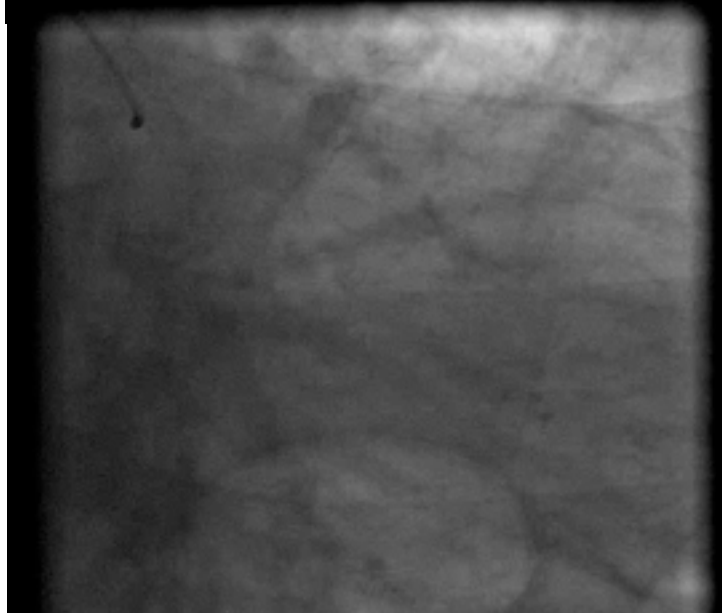
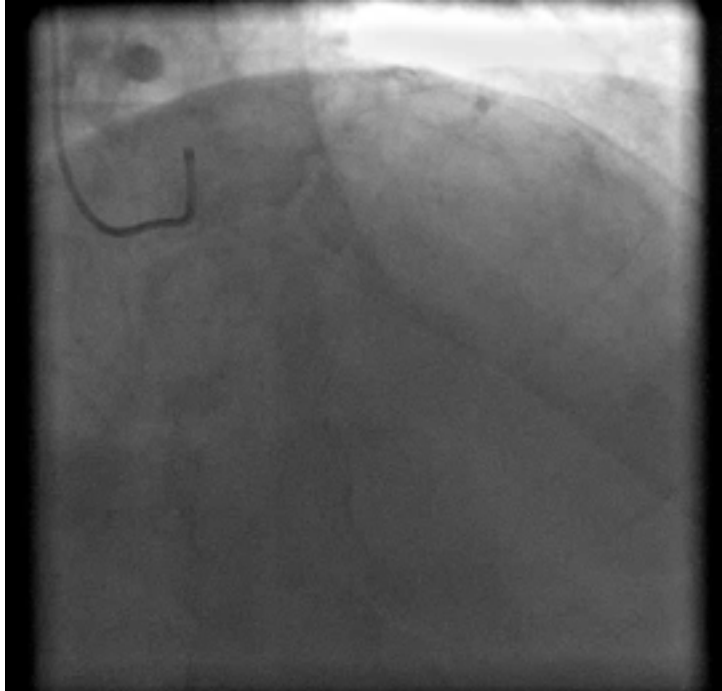


# Exemple :

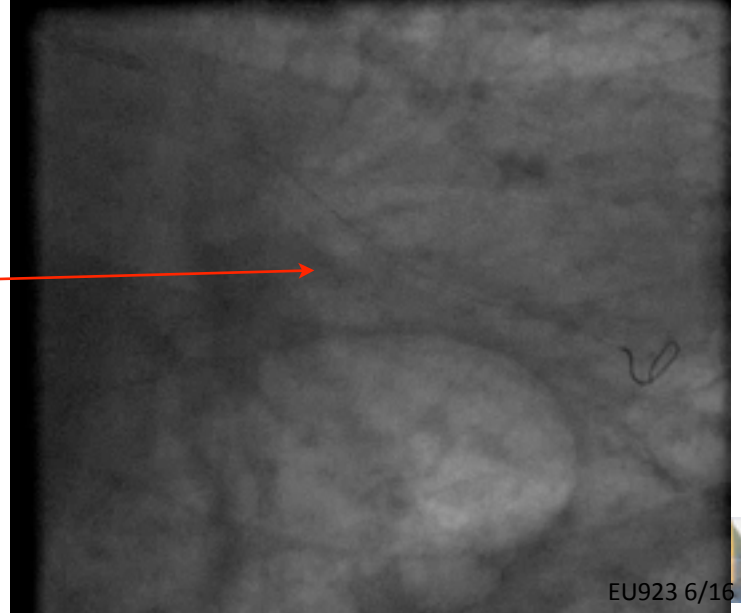
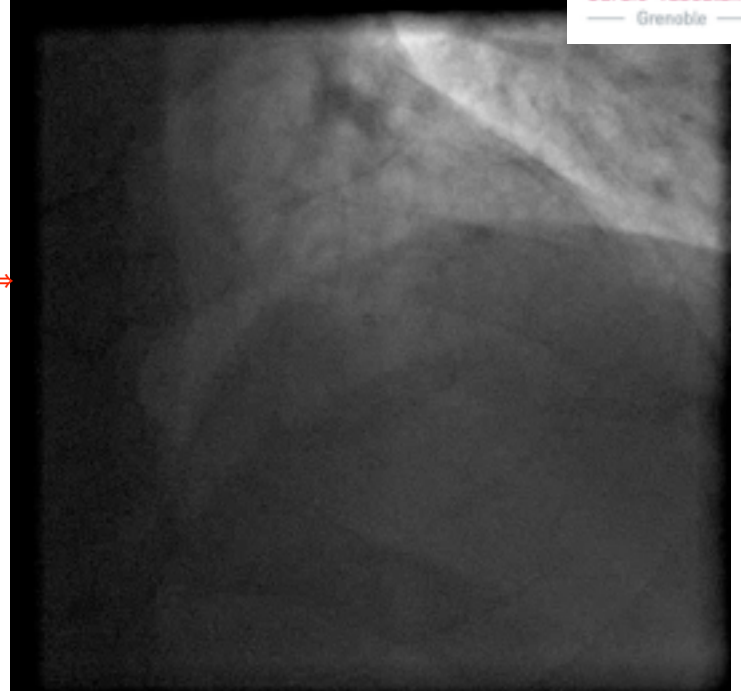
-88 years old gentleman who refused surgery  
-Complex calcified LM trifurcation lesion



# Exemples : High risk patients

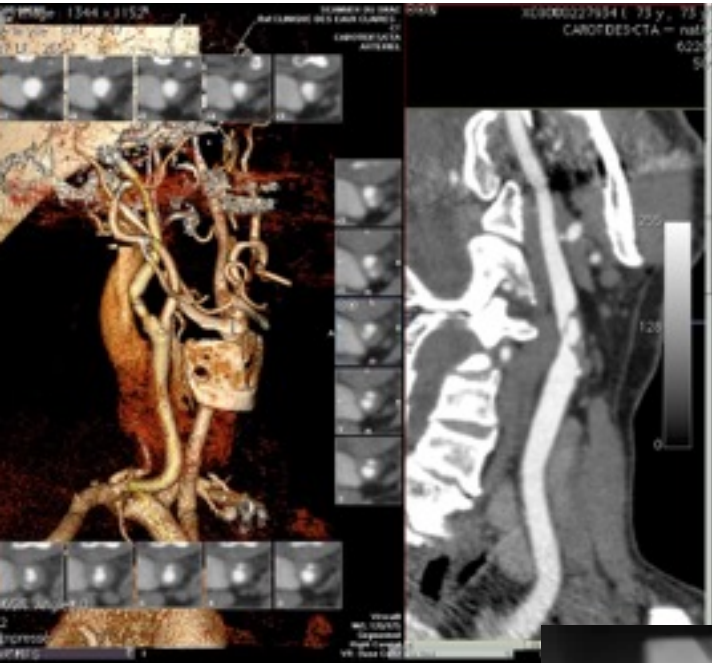


- 74 y.o.
- HBP, Obesity, DL, DM type II, Stroke
- Chronic Renal Failure ⇒  
Clr= 34 ml/mn
- Chronic dyspnea
- June 11: STEMI, lateral leads ⇒ PPCI



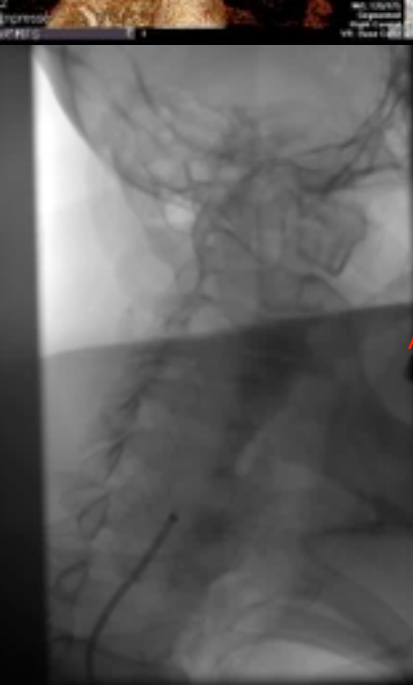
- OM PCI with 2 BMS →

# Exemples : High risk patients

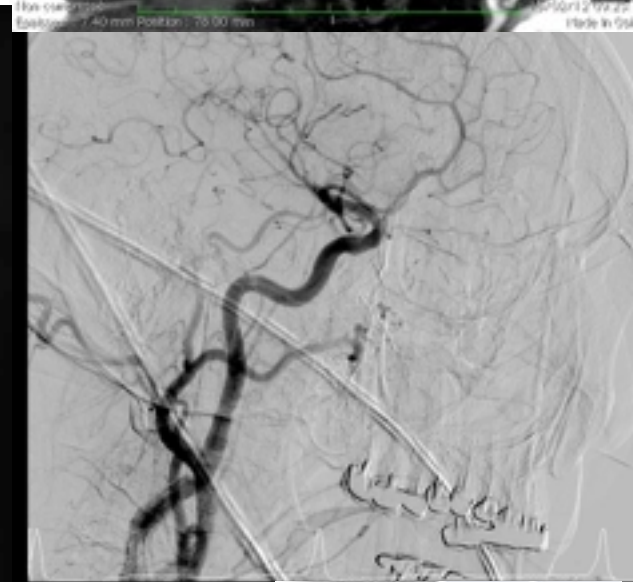
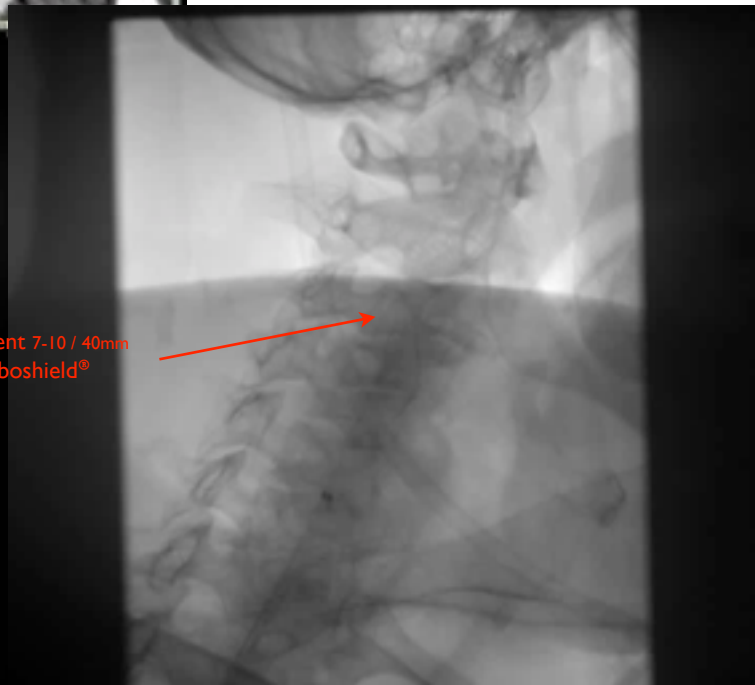


- Cardiac MRI and follow up was mandated but not done by patient...
- March 12 : Ischemic Cardiac Failure + Stroke
- Medical Rx + screening  $\Rightarrow$  Duplex = 80% stenosis of RICA.
- Euroscore = 33%

$\Rightarrow$  Cardio-Vascular Team

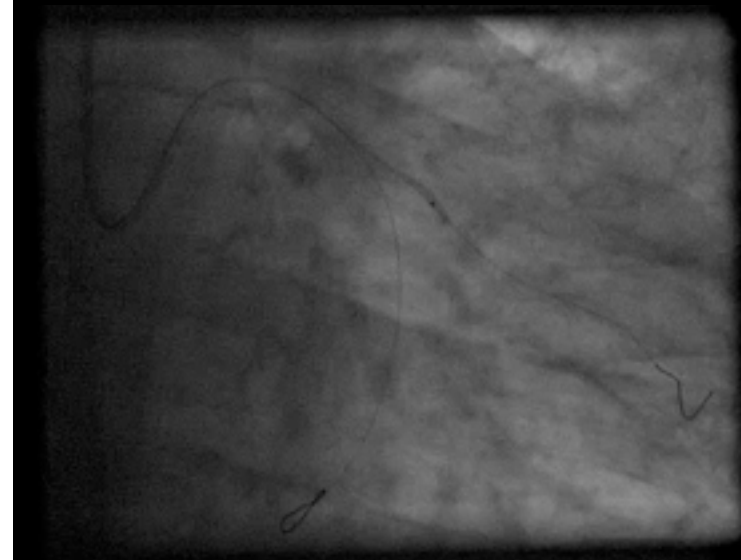
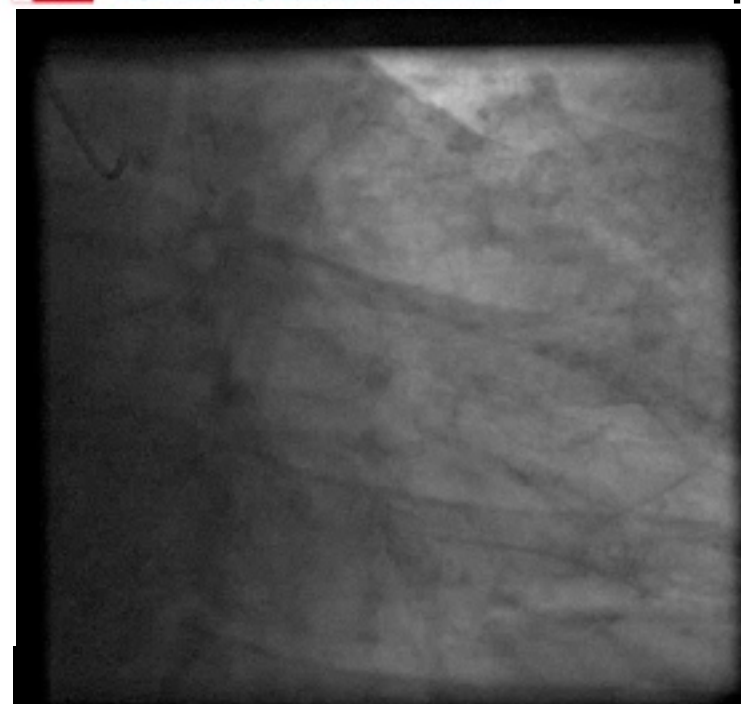


Acculink® stent 7-10 / 40mm  
with Emboshield®

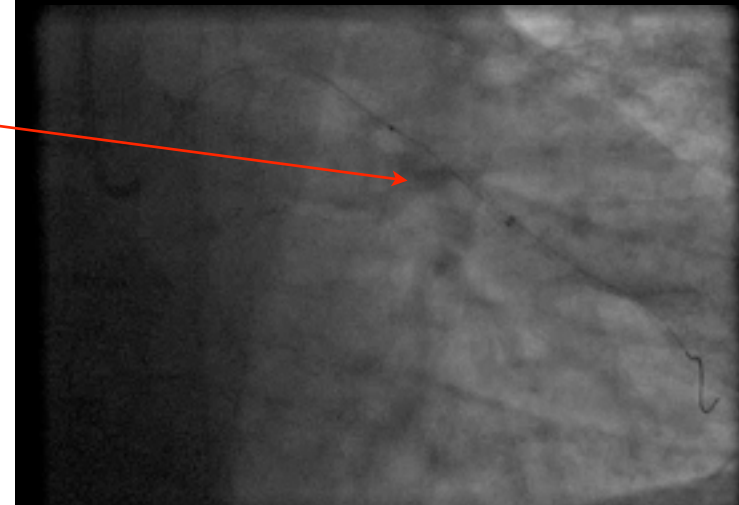




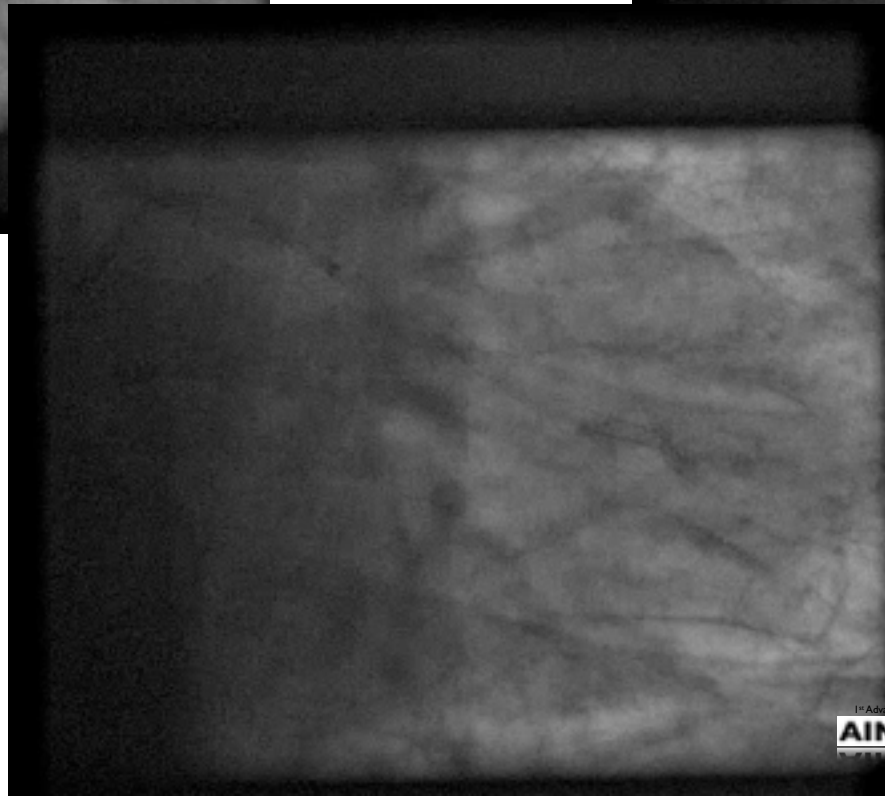
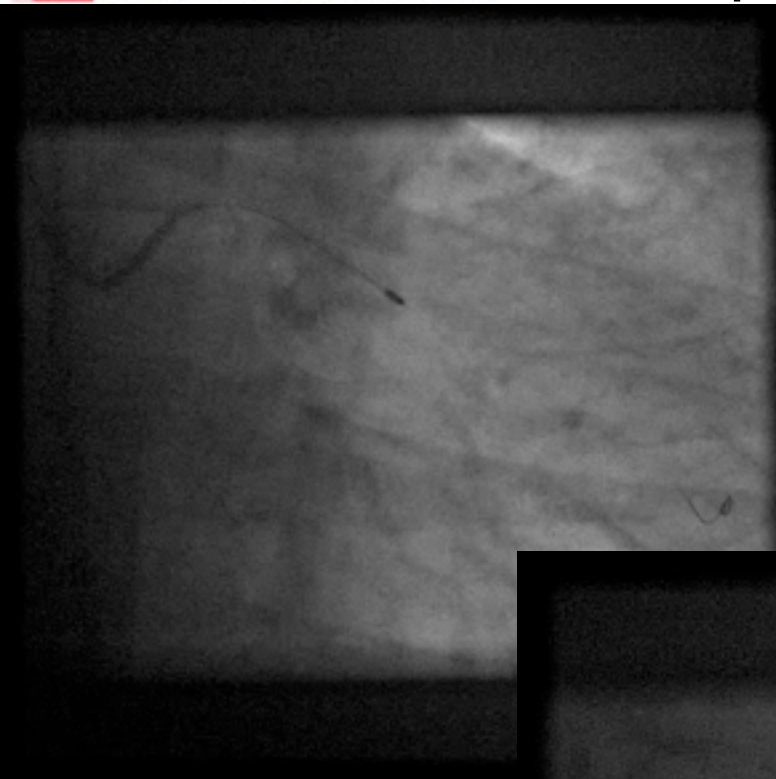
# Exemples : High risk patients



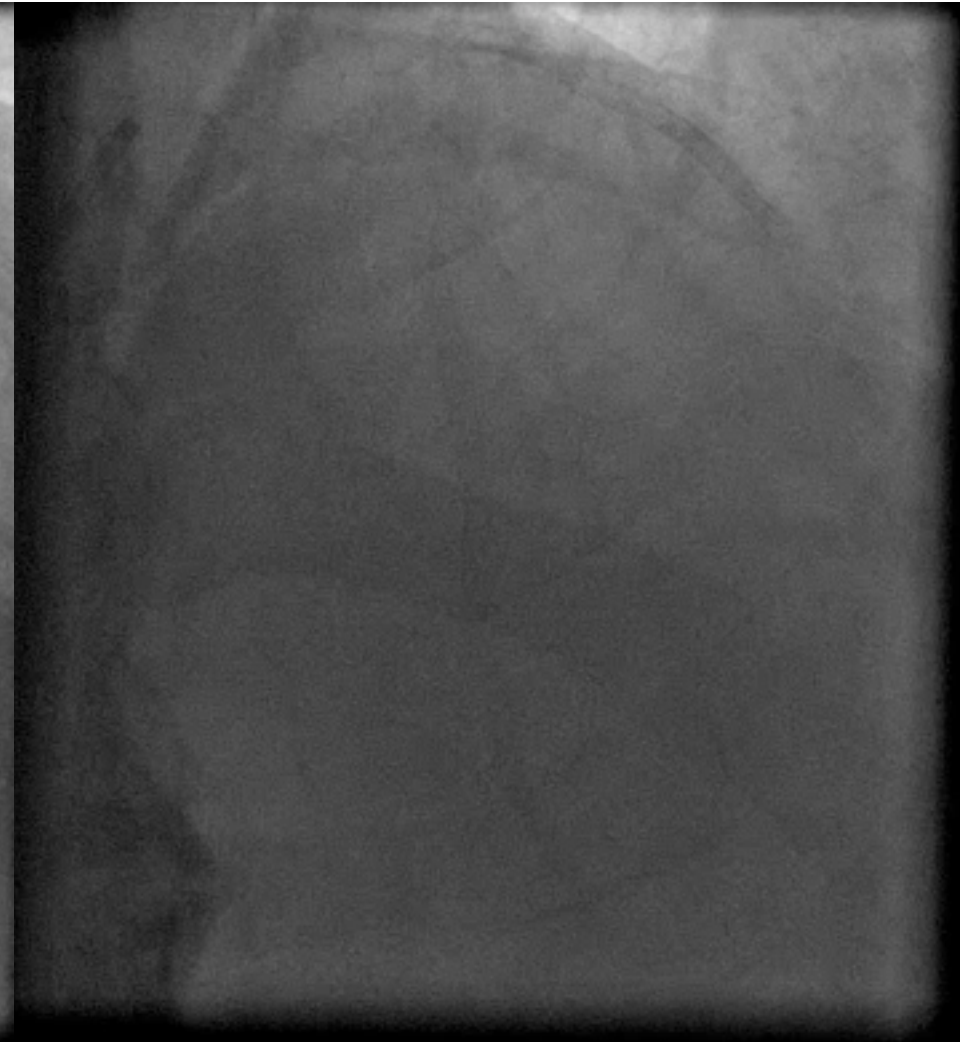
- High difficulties to cross this ISR despite :
- Micro-balloons
- High support GW
- Guideliner 5 in 6F



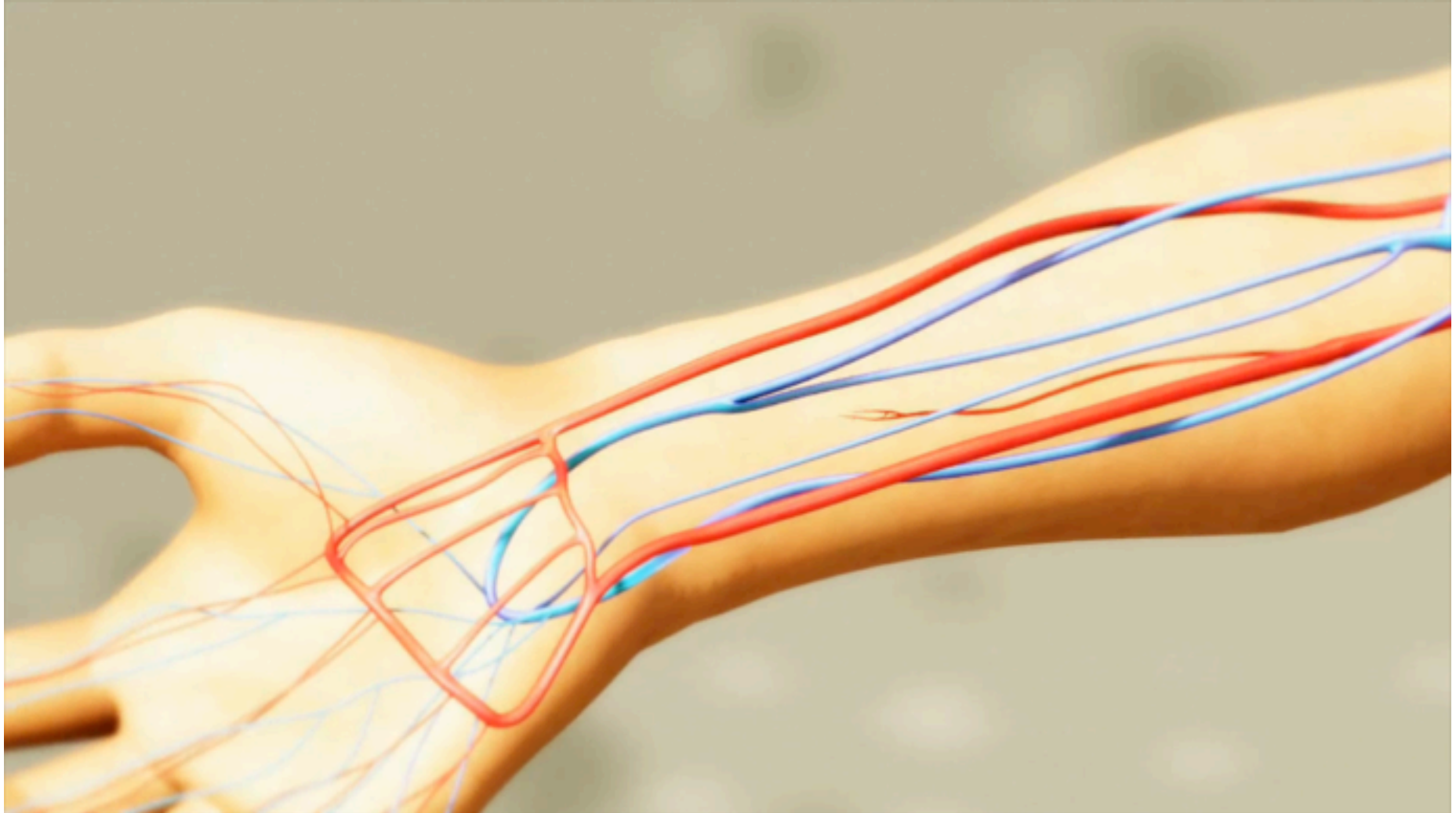
# Exemples : High risk patients



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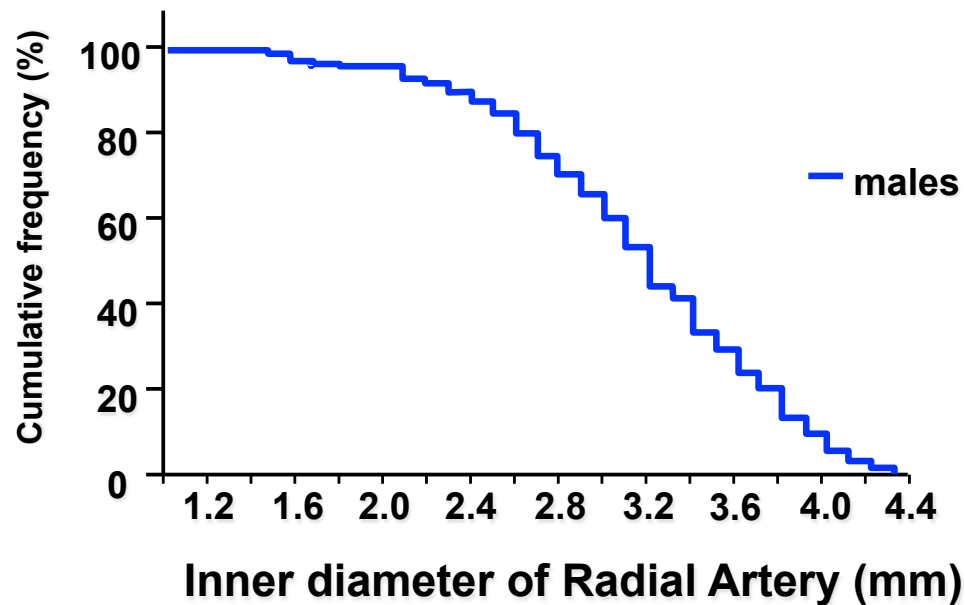
# TRA drawbacks





# TRA drawbacks

Which guiding solutions with a small radial artery?

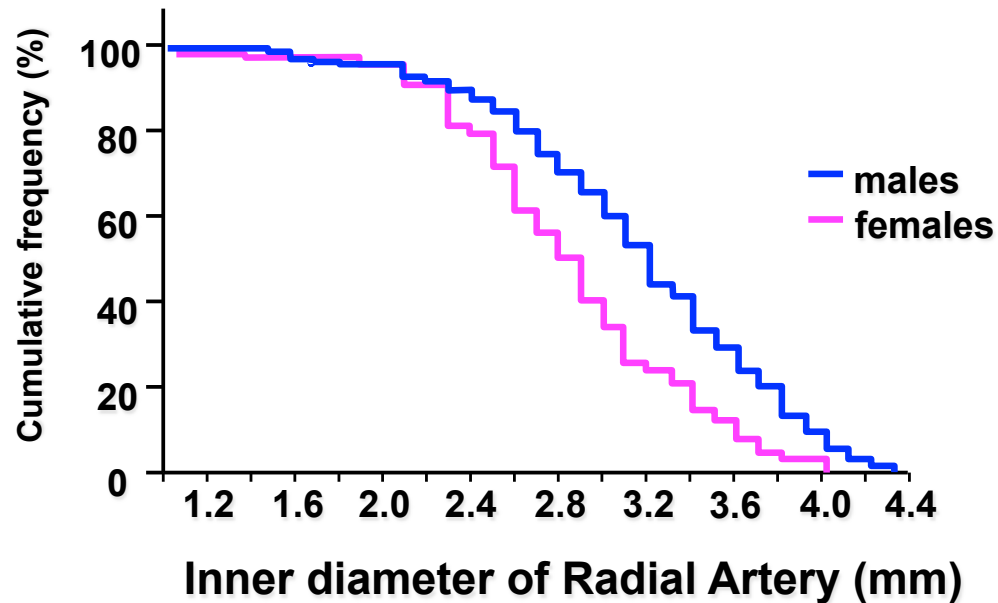


Saito S. CCI 1999



# TRA drawbacks

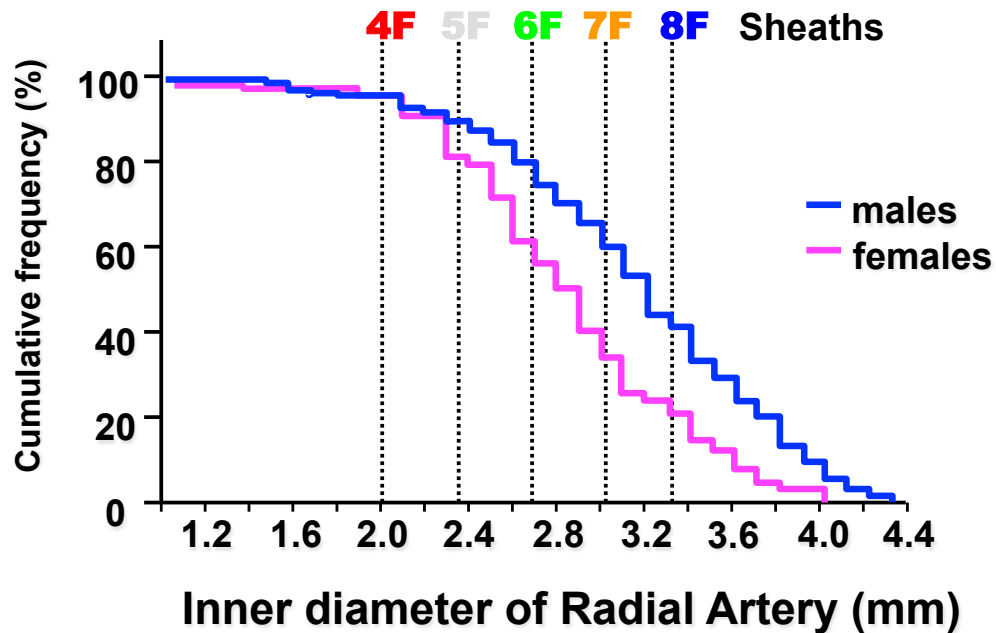
Which guiding solutions with a small radial artery?



Saito S. CCI 1999

# TRA drawbacks

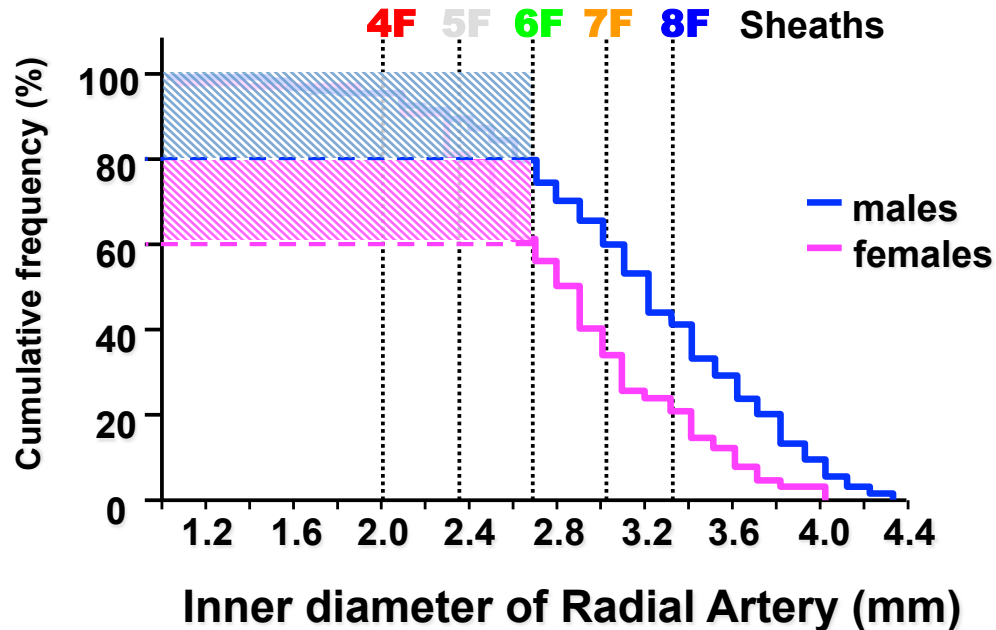
Which guiding solutions with a small radial artery?



Saito S. CCI 1999

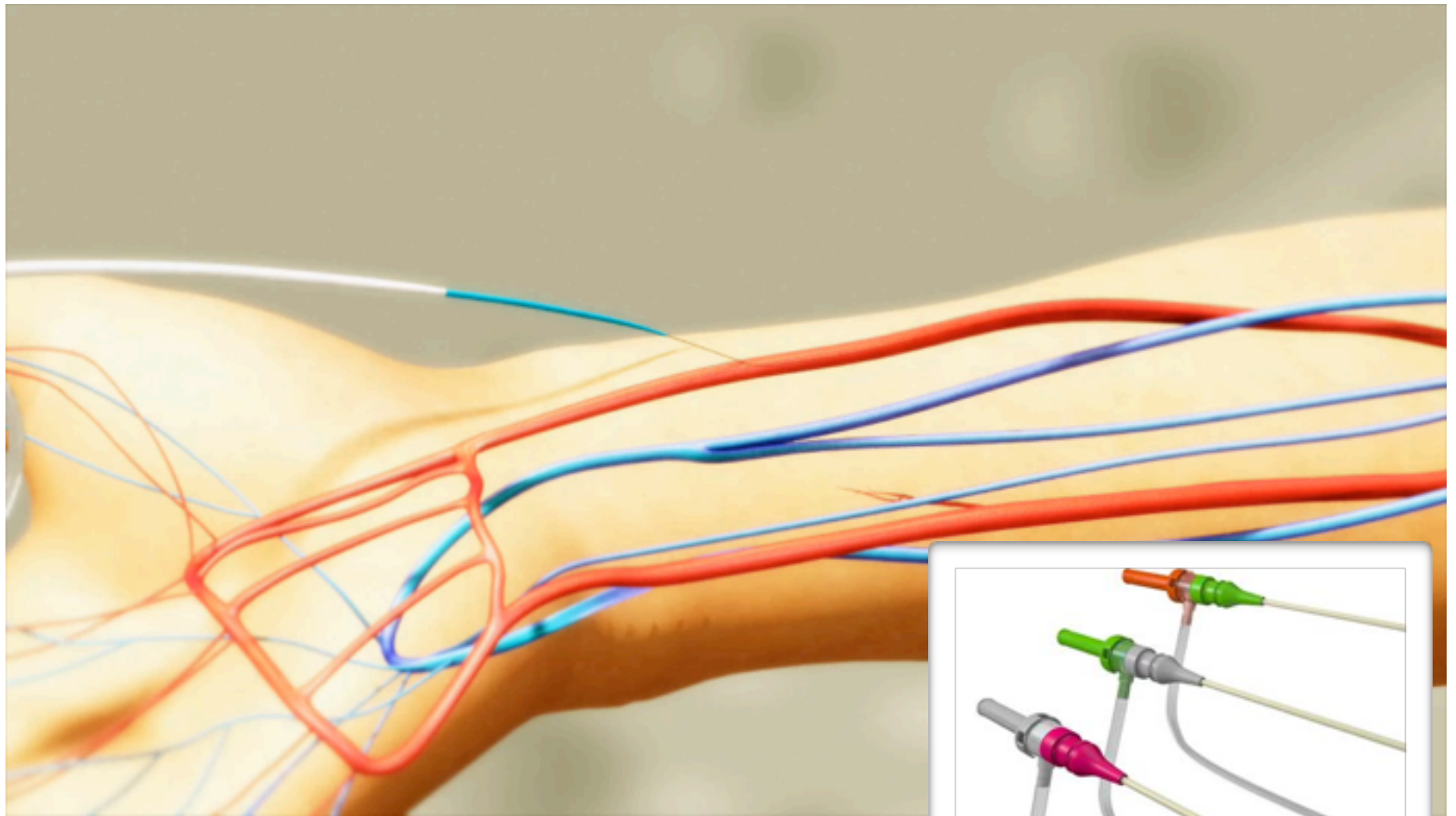
# TRA drawbacks

Which guiding solutions with a small radial artery?



Saito S. CCI 1999

# Answer to TRA Drawbacks



# TRA drawbacks

**Which guiding solutions with a small radial artery?**



Hypoplastic radial artery:

170/2211 (7.7%)

**Valsecchi O. CCI 2006**

# TRA drawbacks





# Answer to TRA Drawbacks

**Same Wrist Intervention via The Cubital (ulnar) artery in case of radial puncture failure for percutaneous cardiac catheterization or intervention:  
the multicenter prospective SWITCH registry**

Pierfrancesco Agostoni, MD, PhD<sup>1</sup> Andrea Zuffi, MD<sup>2</sup> Benjamin Faurie, MD<sup>3</sup> Mariam Samim, BSc<sup>1</sup>

Paolo Tosi, MD<sup>4</sup> Pieter R. Stella, MD, PhD<sup>1</sup> Michiel Voskuil, MD, PhD<sup>1</sup> Giuseppe Biondi-Zoccai, MD<sup>5</sup>

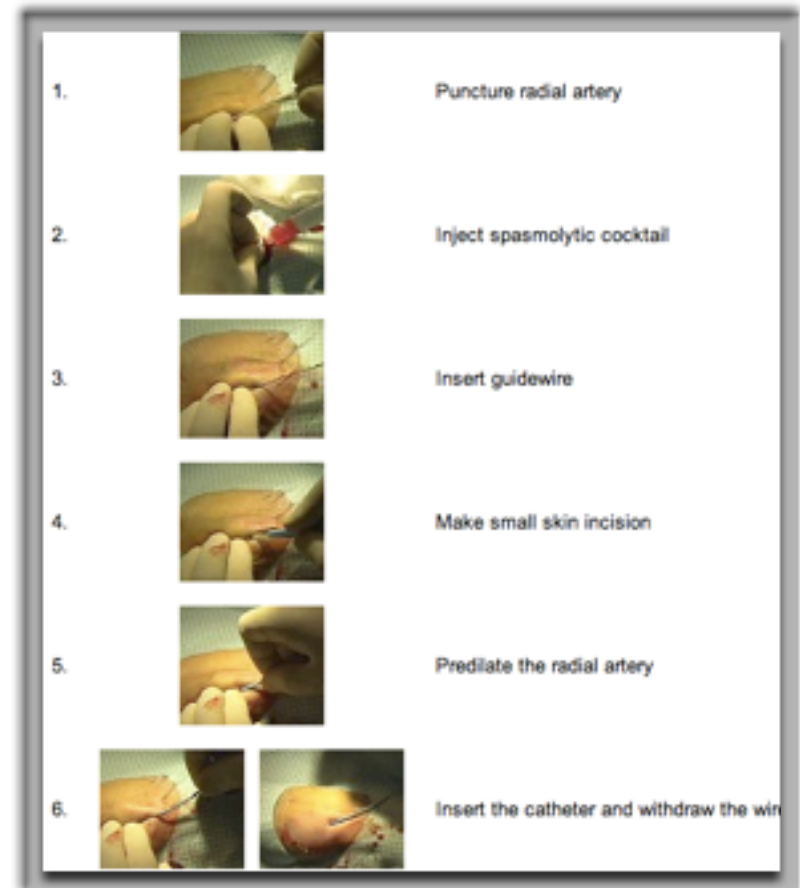


Int J Cardiol. 2013 Oct 25;169(1):52-6.



# Answer to TRA Drawbacks

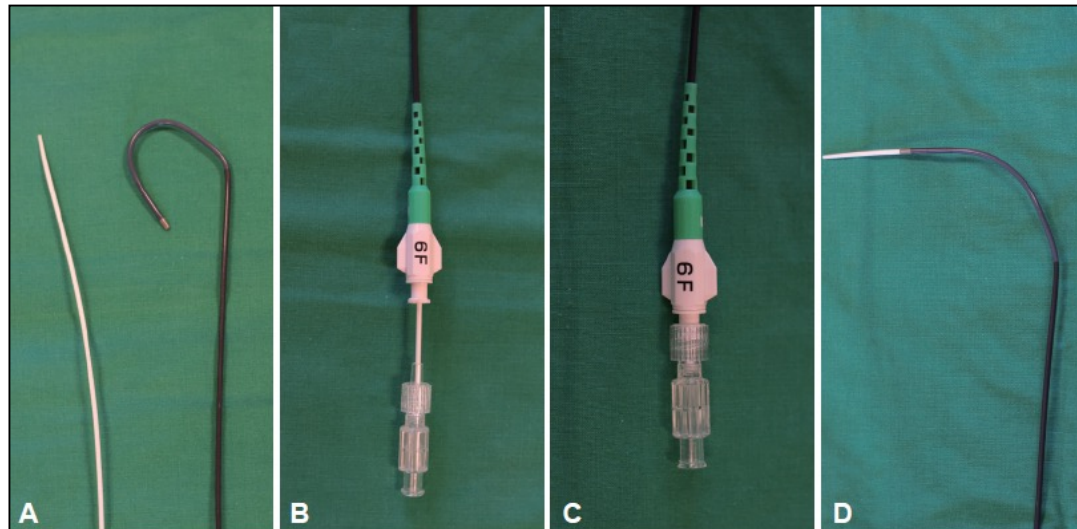
## introduction of the sheathless concept





# Answer to TRA Drawbacks

## introduction of the sheathless concept



Catheterization and Cardiovascular Interventions 75:596-602 (2010)

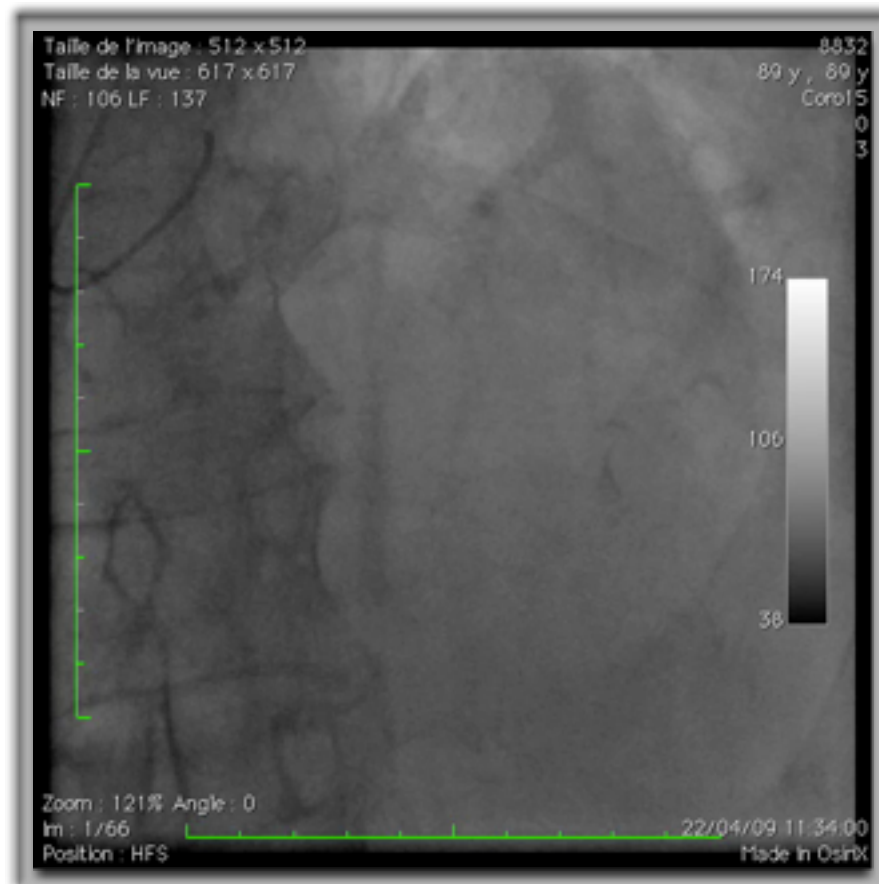
### Use of the Sheathless Guide Catheter During Routine Transradial Percutaneous Coronary Intervention: A Feasibility Study

Mamas Mamas,<sup>1,2</sup> MD, Savio D'Souza,<sup>1</sup> MD, Cara Hendry,<sup>1</sup> MRCR, Razwan Ali,<sup>1</sup> BM, BCh, Heather Iles-Smith,<sup>1</sup> MSc, Karen Palmer,<sup>1</sup> DPSN, Magdi El-Omar,<sup>1</sup> MD, Farzin Fath-Ordoubadi,<sup>1</sup> MD, Ludwig Neyses,<sup>1</sup> MD, and Douglas G. Fraser<sup>1\*</sup> MD



## introduction of the sheathless concept

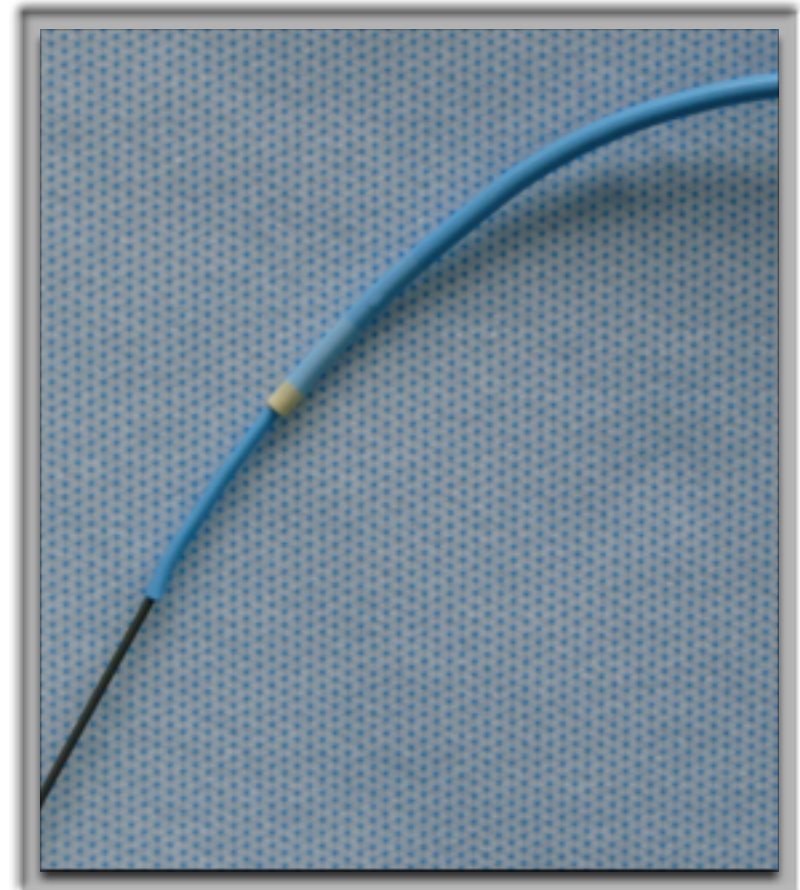
- ❑ Wo. 83y/o, ACS
- ❑ Impossibility to perform CA with 5F cath. ⇒ 4F cath.
- ❑ PCI ?



# Answer to TRA Drawbacks

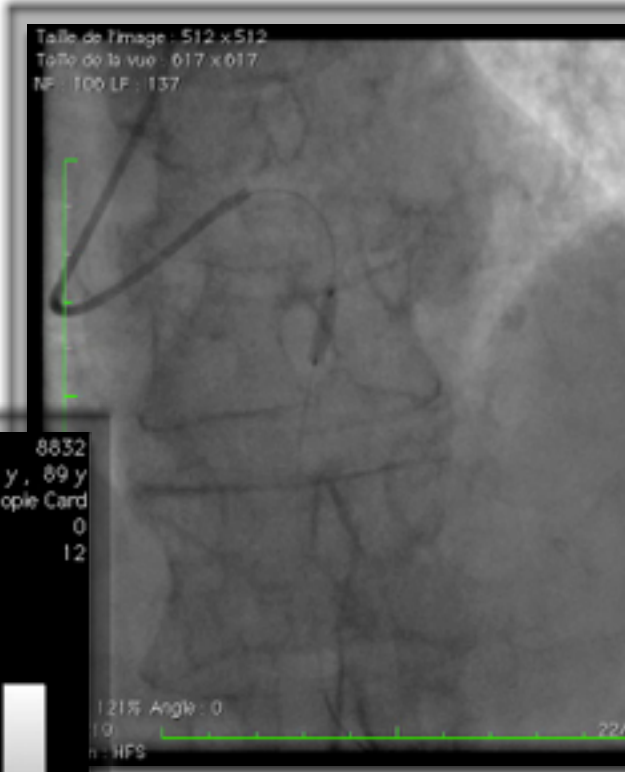
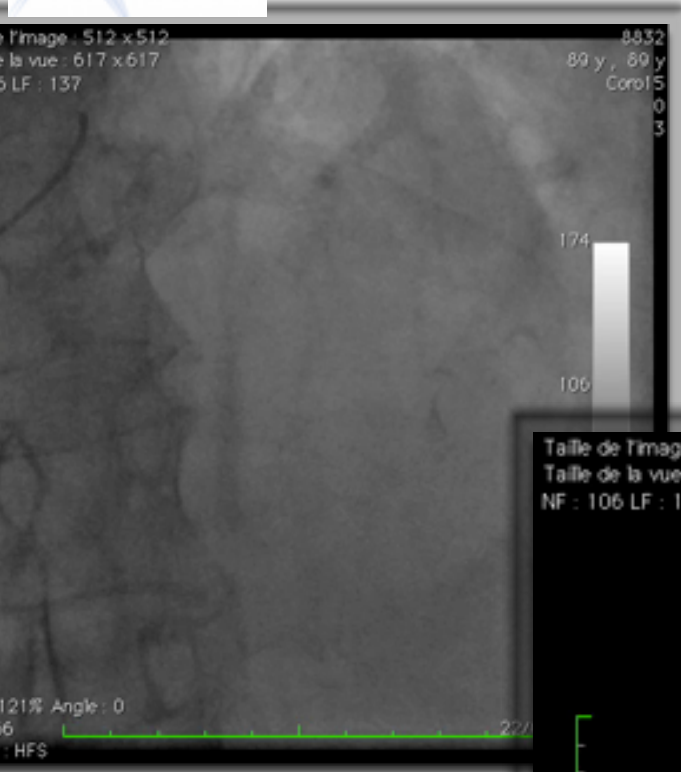
## introduction of the sheathless concept

- ❑ 4F pigtail (115cm)
- ❑ in a 5F Hydrophilic large lumen Guiding Cath. (Terumo HearthRail)
- ❑ Nitro on the cath.



# Answer to TRA Drawbacks

## Introduction of the sheathless concept





# Answer to TRA Drawbacks

## introduction of the sheathless concept

**Radial loop and extreme vessel tortuosity in the transradial approach: advantage of hydrophilic-coated guidewires and catheters.**

**Gérald Barbeau - Catheter Cardiovasc Interv** 2003 Aug;59(4):442-50.

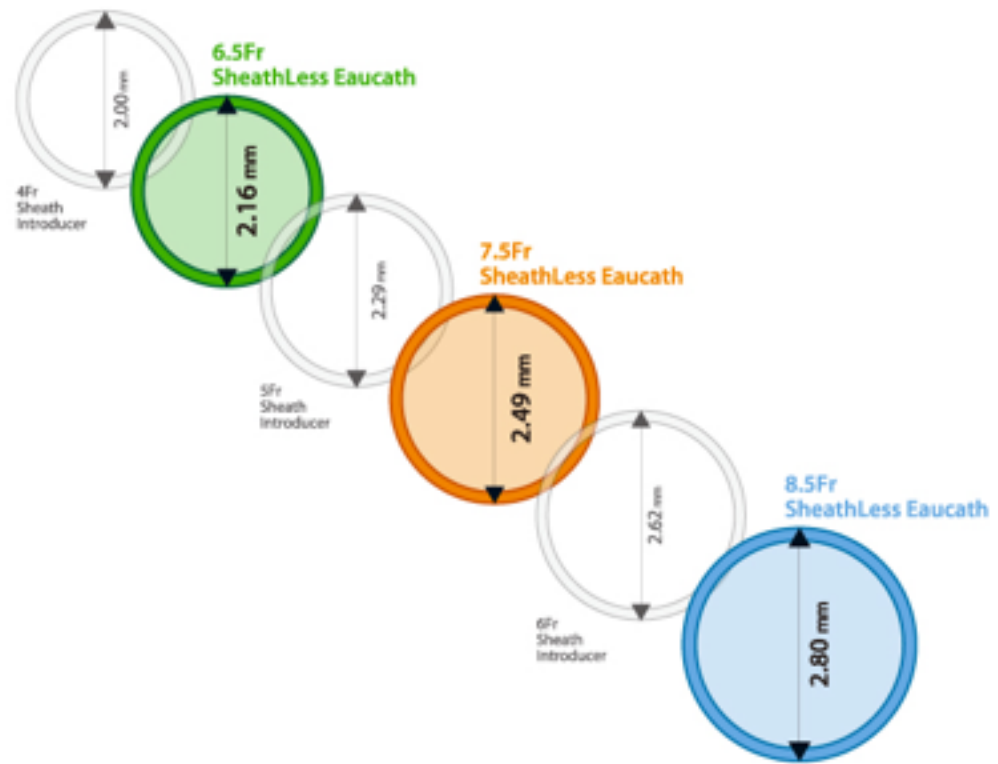
- ◇ Département de Cardiologie, Hôpital Laval, Institut Universitaire de Cardiologie et de Pneumologie, affilié à l'Université Laval, Ste-Foy, Quebec, Canada.

Between October 2000 and October 2001, all transradial cases performed by the author necessitating radial and upper arm angiography because of difficult advancement of standard guidewires or catheters were analyzed retrospectively. Fourteen of 594 (2.4%) transradial cases met the study criteria. Radial loops or stenosis and tortuosity in the subclavian or innominate artery were responsible for the difficult access. Several examples of patients with access problems are presented. A technique using a hydrophilic-coated guidewire and a new hydrophilic-coated guiding catheter is described.

**Envy Catheter by Cook<sup>®</sup> (doesn't exist anymore)**

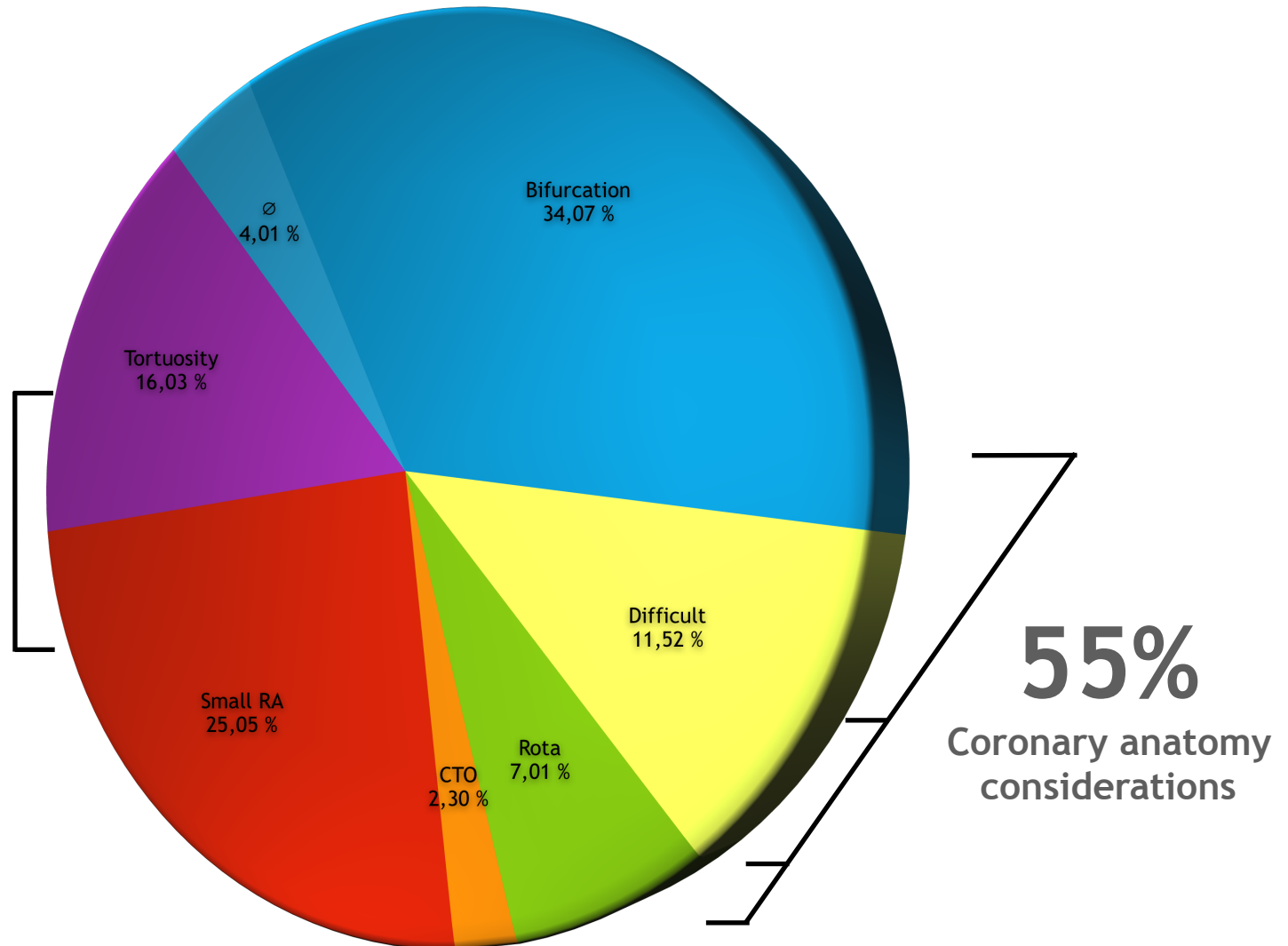
# Answer to TRA Drawbacks

## introduction of the sheathless concept



# Why Sheathless?

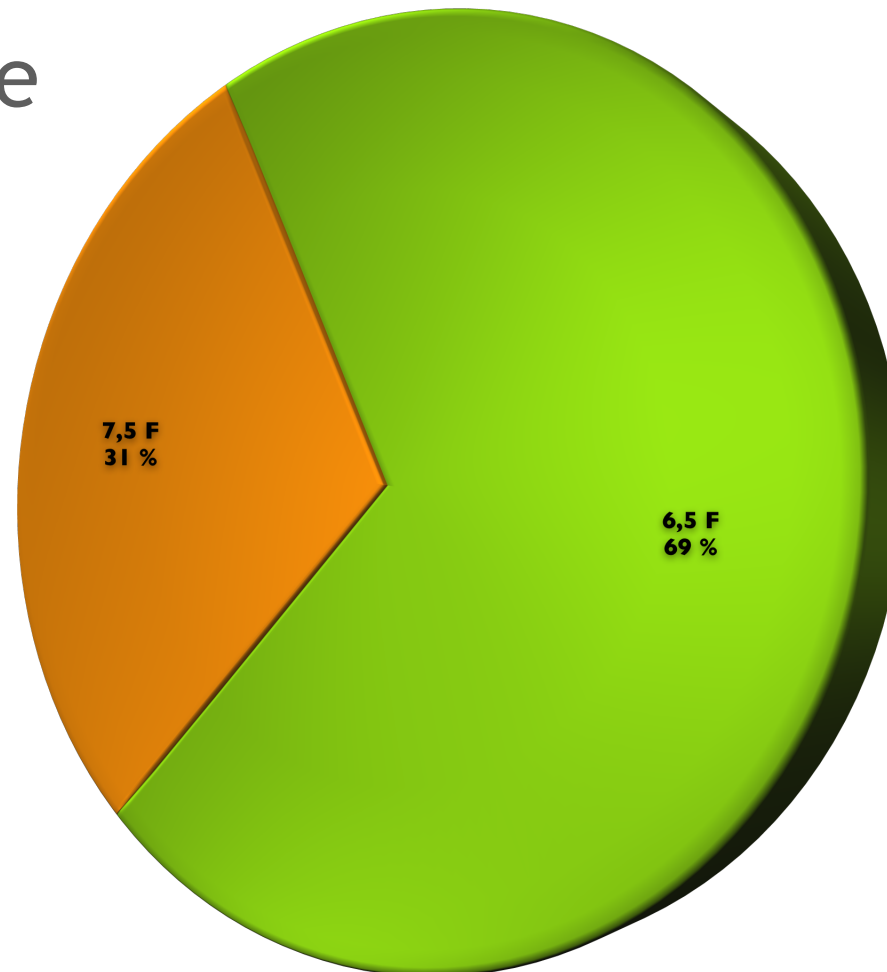
Asahi SheathLess (n=257) : 2009-2011



# Why Sheathless?

Asahi SheathLess (n=257) : 2009-2011

Catheter size

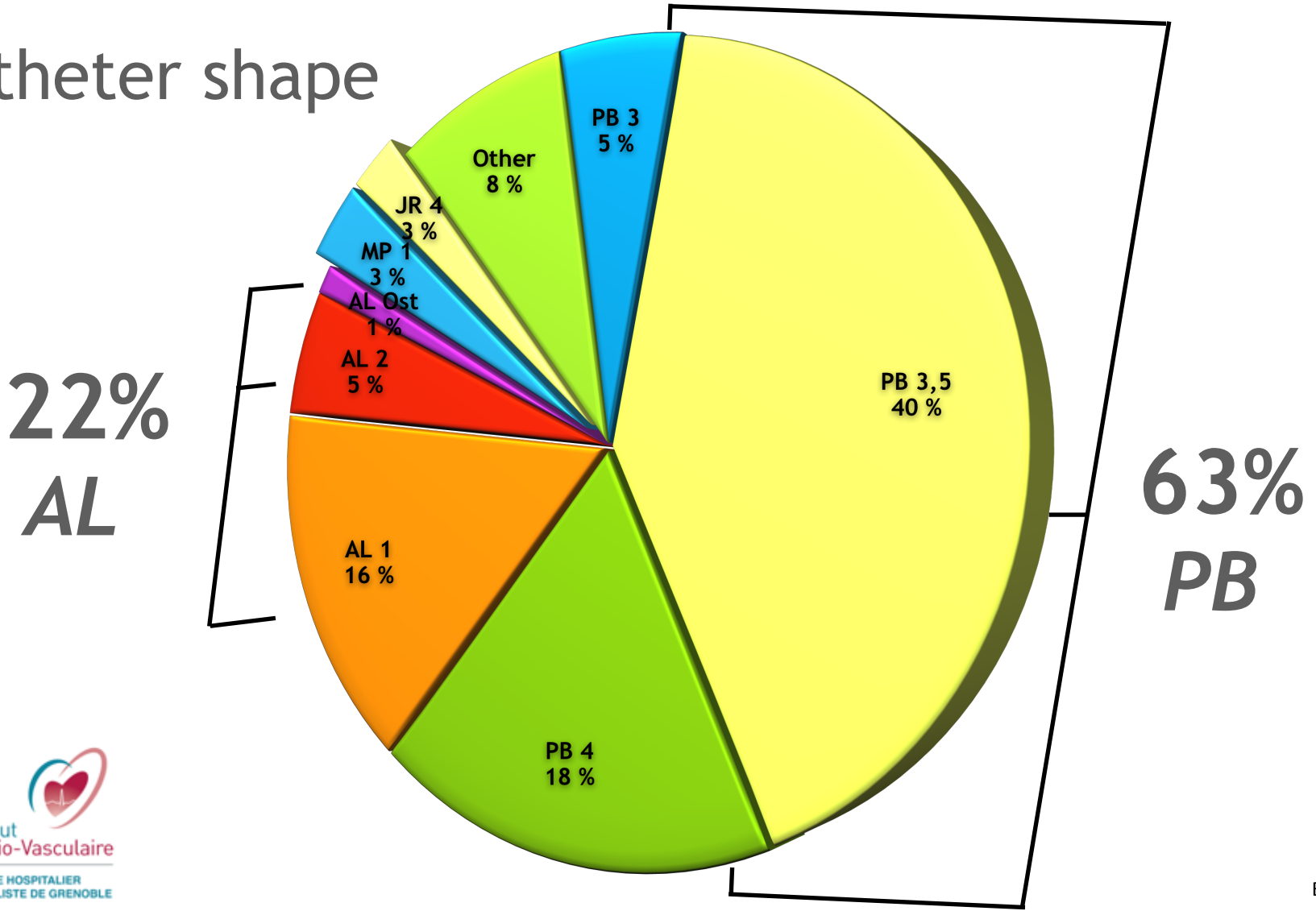




# Why Sheathless?

Asahi SheathLess (n=257) : 2009-2011

Catheter shape



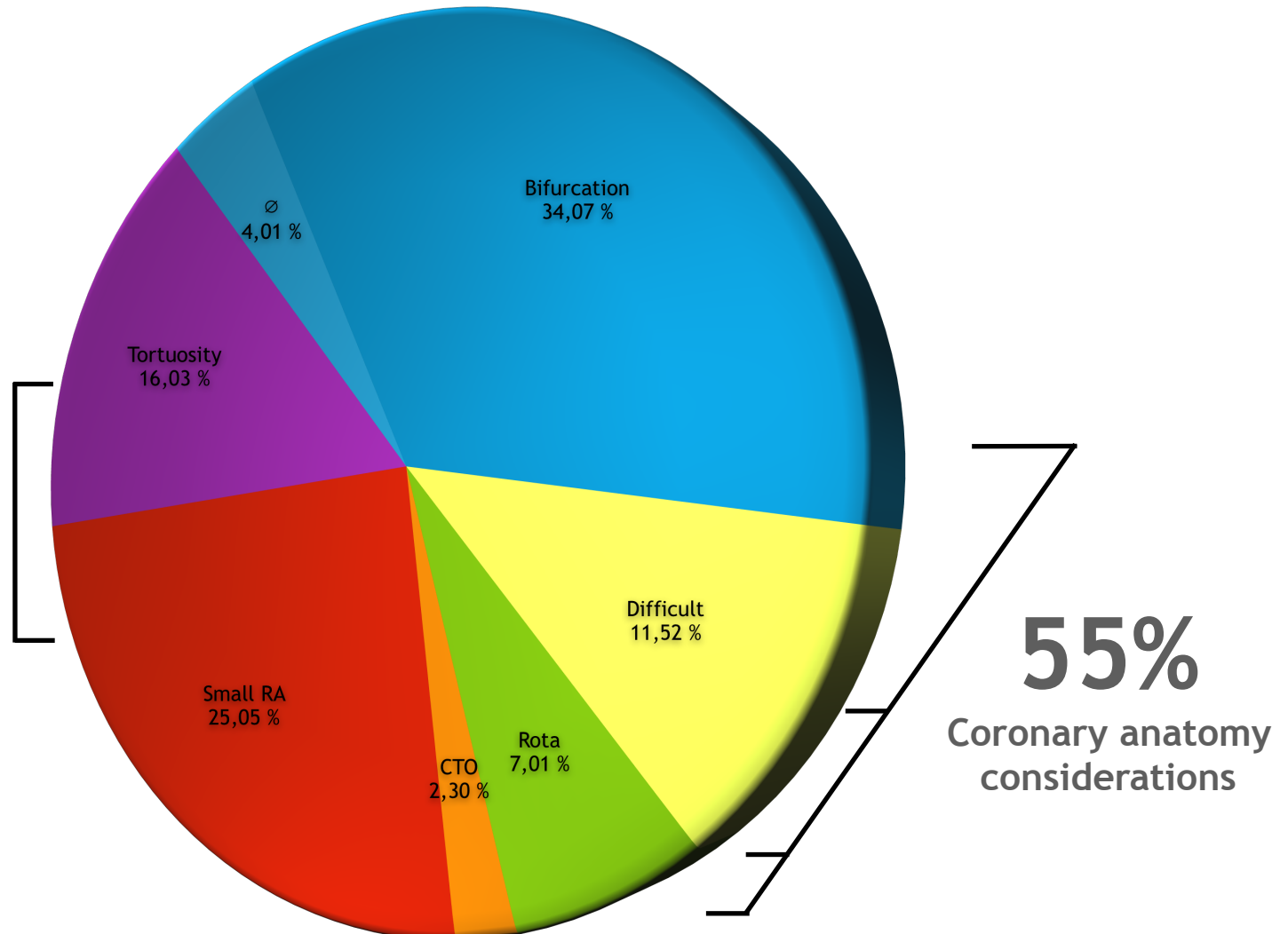
# Exemple

CTO

Benjamin Faurie, MD  
Mohamed Abdellaoui, MD  
CMG GRENOBLE

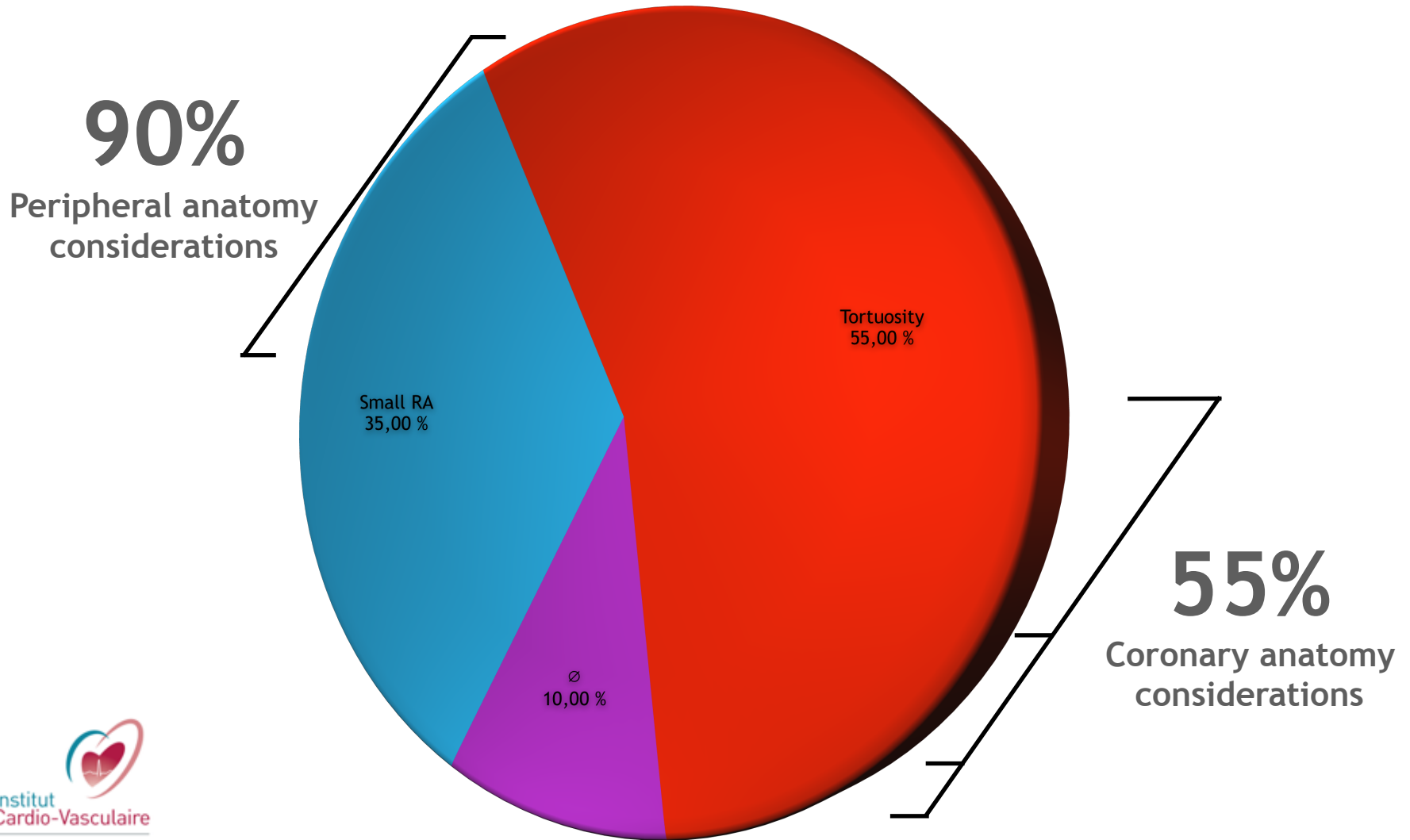
# Why Sheathless?

Asahi SheathLess (n=257) : 2009-2011



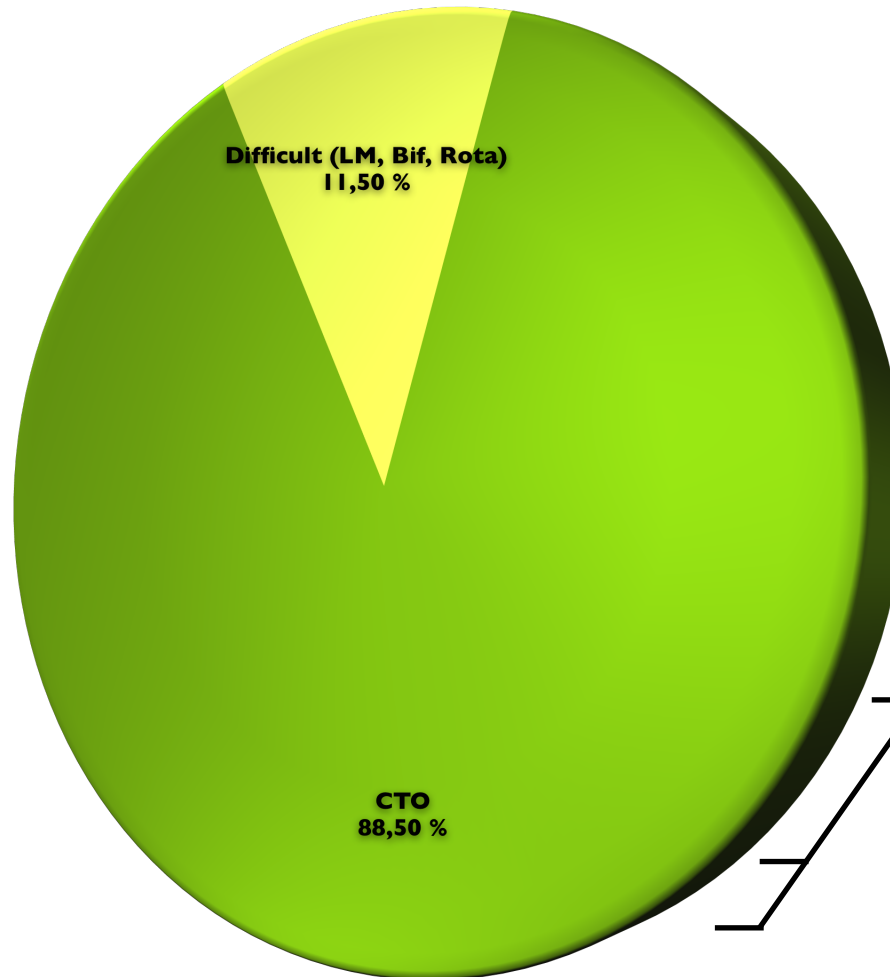
# Why Sheathless?

Asahi SheathLess (n=257) : 2009-2011



# Why Sheathless?

« 7F; 8F Sheathless »  
(n=180) 2013-2015



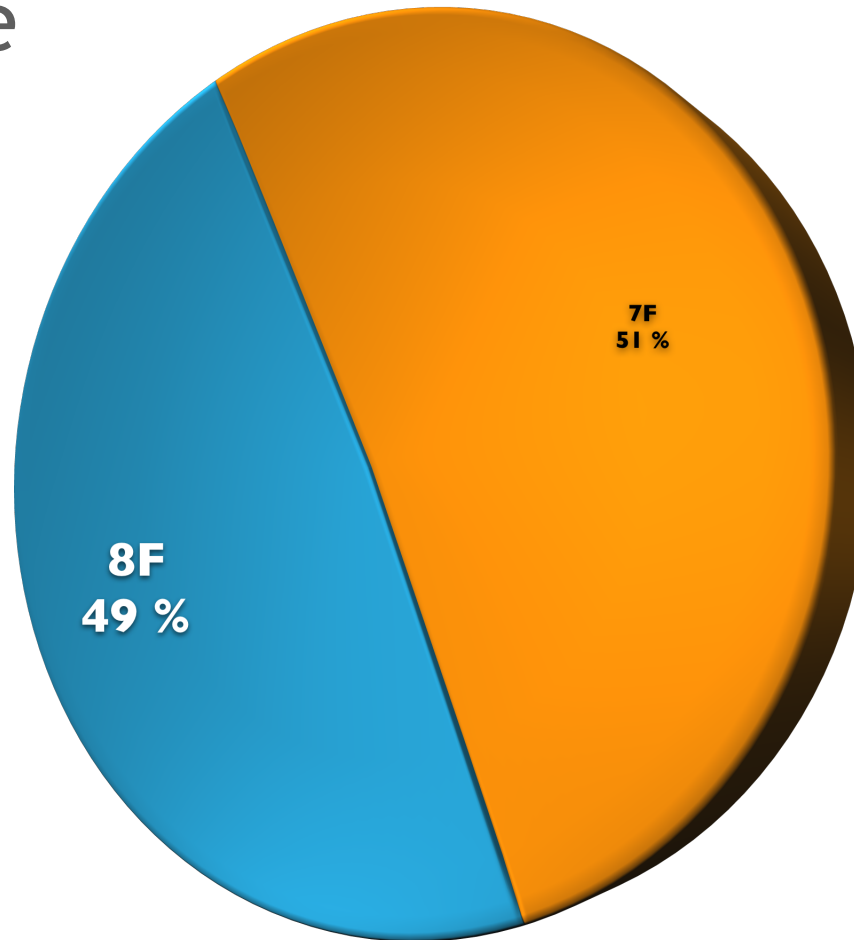
100%  
Coronary anatomy  
considerations



# Why Sheathless?

« 7F; 8F Sheathless »  
(n=180) 2013-2015

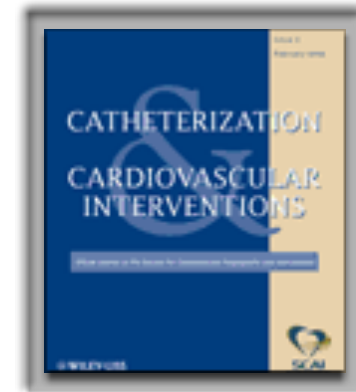
## Catheter size



# Future of TRA?

## Novel 5-Fr sheathless guiding catheter «Virtual 3-Fr, Medikit, Japan»

- ❑ **5-Fr Guiding cath. + central dilator**
- ❑ **Equivalent 3-Fr Introducer puncture hole**



Transradial coronary intervention using a novel 5-Fr sheathless guiding catheter.

**Takeshita S., Saito S.**

**Catheter Cardiovasc Interv** 2009 Apr 27.



Virtual 3 Fr PCI system for complex percutaneous coronary intervention.  
**EuroIntervention**. 2009 Sep;5(4):515-7.

CVIT後援ライブデモンストレーション 専門医認定医更新点数2点  
日本血管造影インターベンション専門治療技術師機構 認定団体 出席ポイント1単位

Slender Club Japan  
Live Demonstration

&  
Annual Meeting 2011

Festival Chiriac AUG  
〒030-8011-3-7 Shinmachi Aomori City  
TEL +81-17-721-8000  
8 & 9, April, 2011  
Course Director : Fuminobu Yoshimachi MD, PhD  
registration fee : Doctor JPY10,000. Co-medical JPY1,000

Slender Club Japan  
E-mail : slender.club.japan@gmail.com  
Home Page : <http://www.cardiologist.jp/ptca5fr/scj.htm>

# Mini-Invasive

A new 0.010-inch guidewire and compatible balloon catheter system:  
the IKATEN registry.  
Catheter Cardiovasc Interv. 2009 Apr 1;73(5):605-10.



A prospective multicenter registry of 0.010-inch guidewire and compatible system for chronic total occlusion: the PIKACHU registry.  
Catheter Cardiovasc Interv. 2010 Jun 1;75(7):1006-12

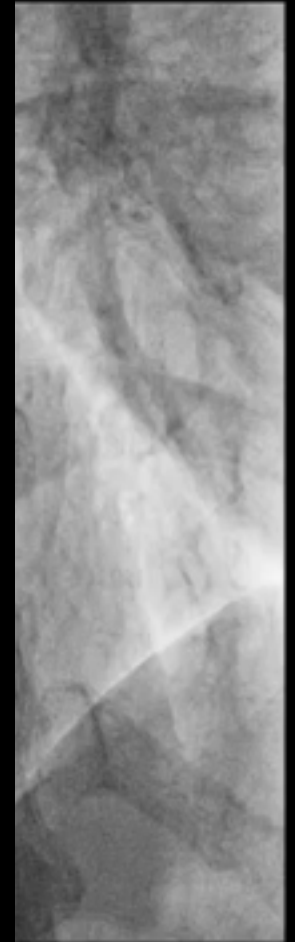


Kissing balloon technique within a 5 Fr guiding catheter using 0.010 inch guidewires and 0.010-inch guidewire-compatible balloons.  
J Invasive Cardiol. 2007 Dec;19(12):519-24.

# Complex PCI through TRA?

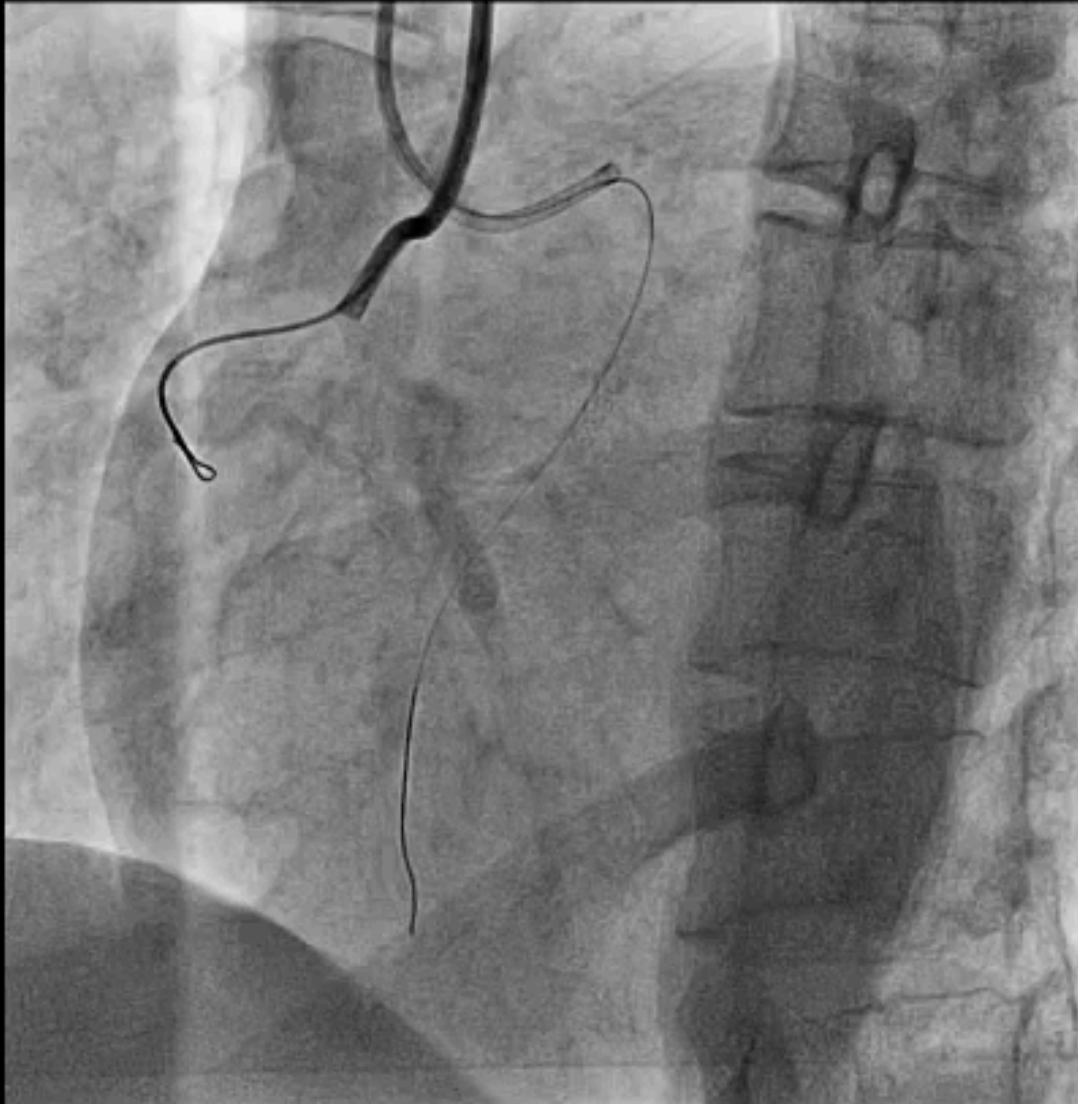
- 44 y.o Woman
- Smoker, DL, Family history CAD
- STEMI anterior : PPCI (4 hours)

# Complex PCI through TRA?





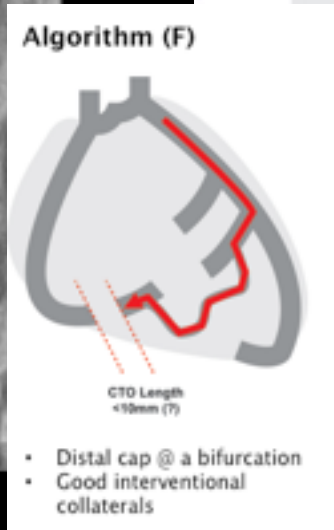
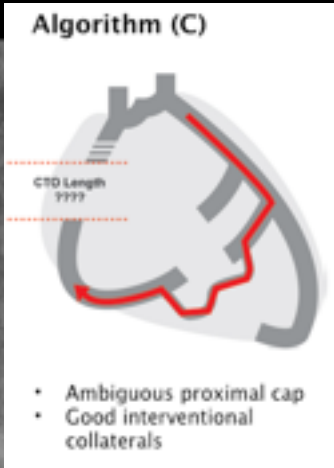
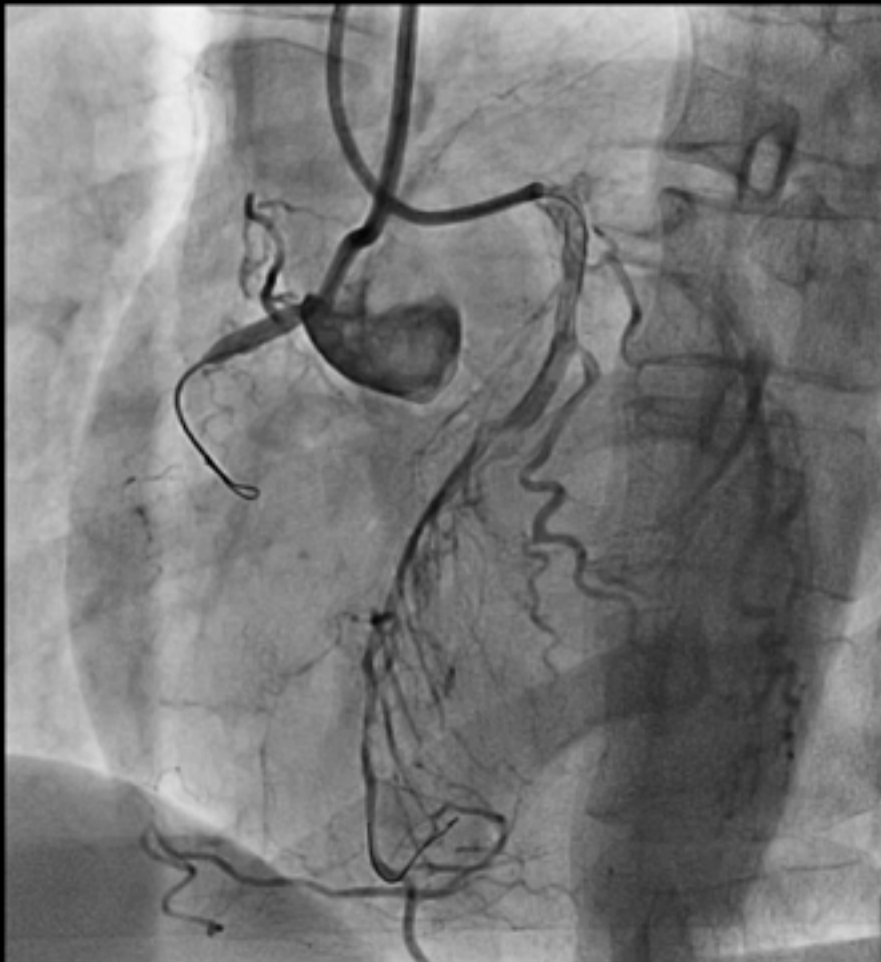
# Complex PCI through TRA?



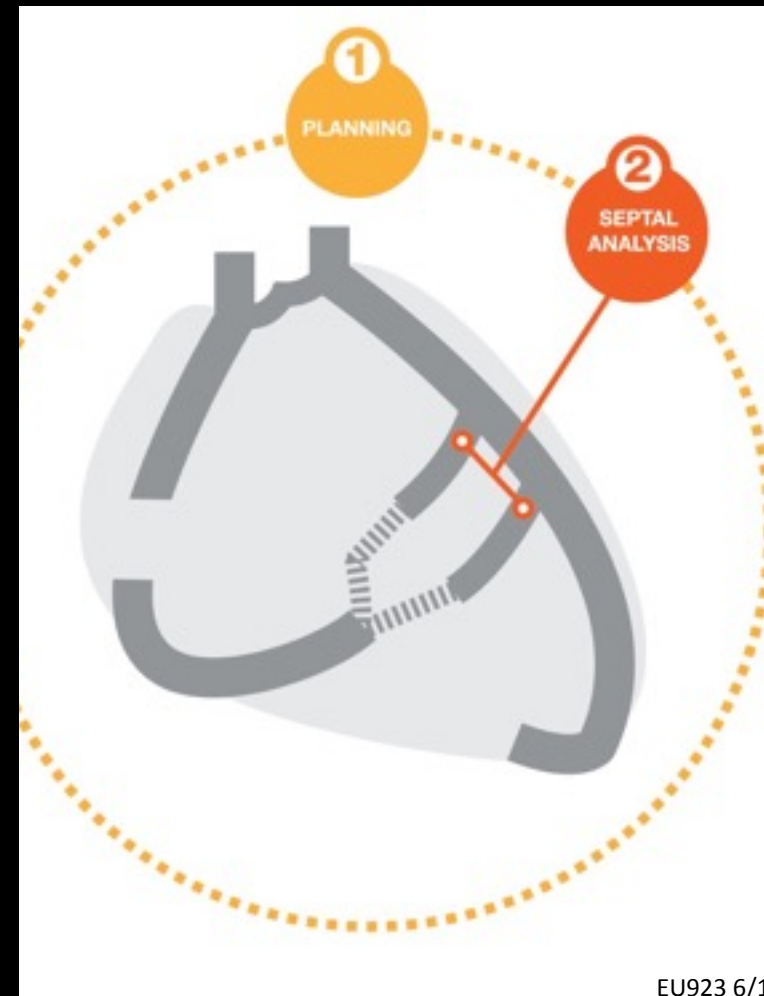
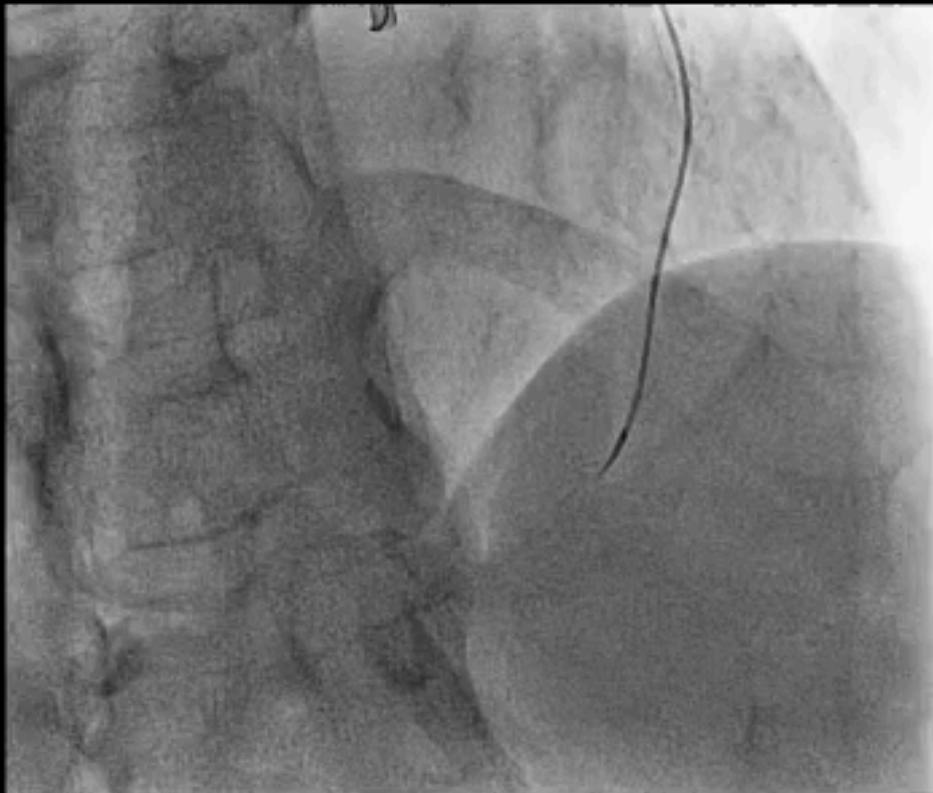
- Troponin 33000pg/ml
- Cardiac MRI : inferior viability, EF=45%, ant-apical hypokinesia



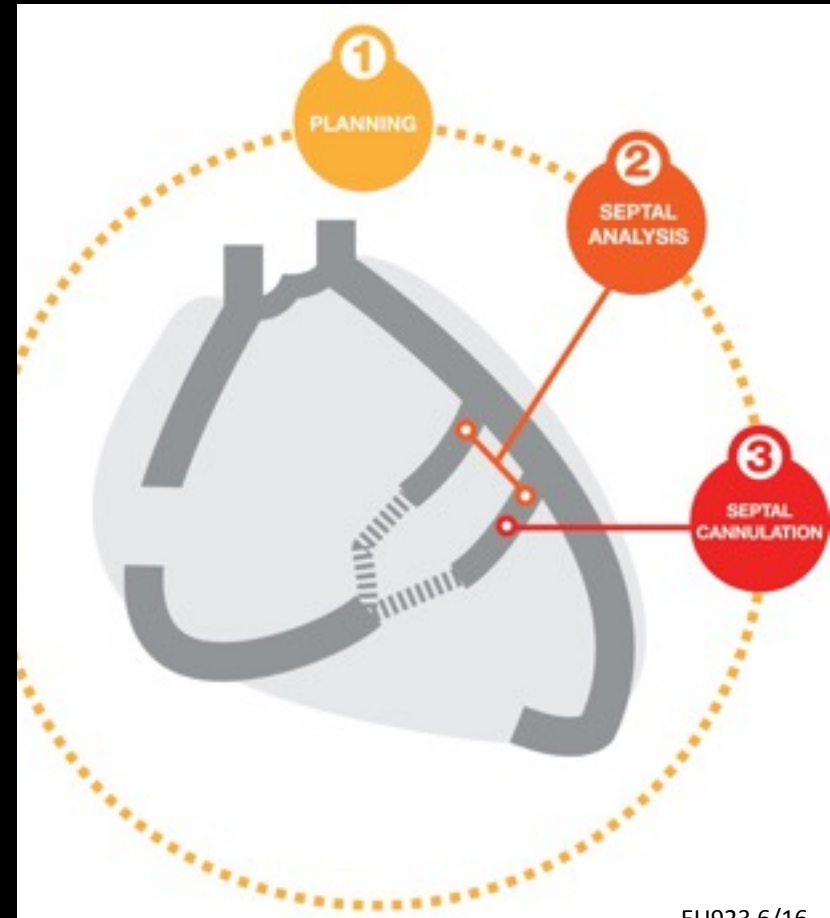
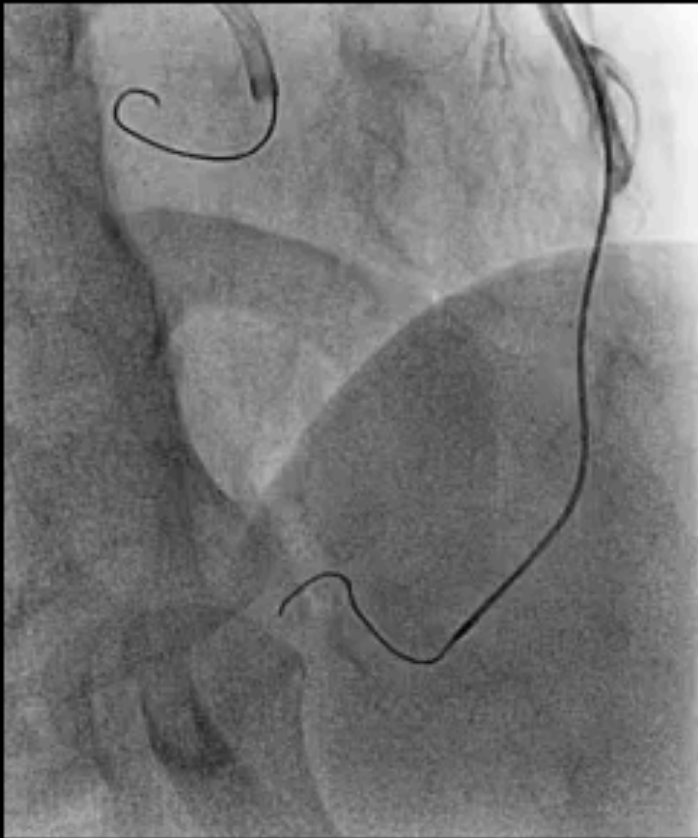
# Complex PCI through TRA?



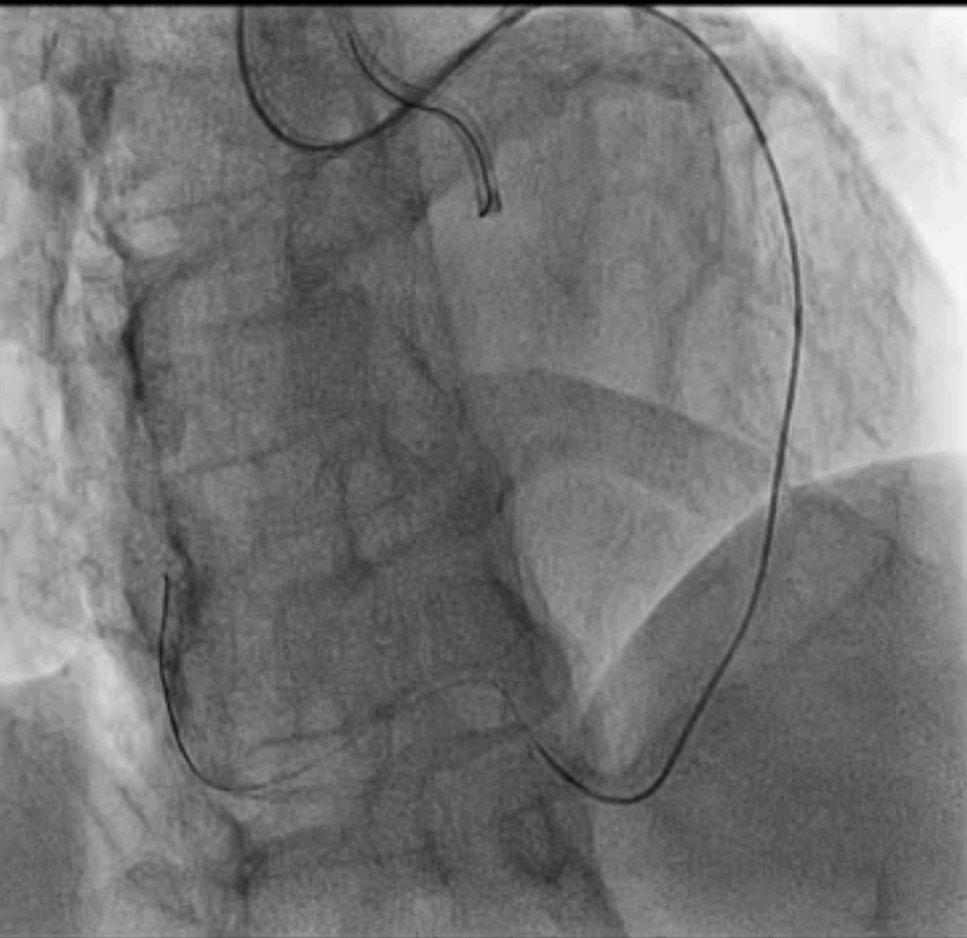
# Complex PCI through TRA?



# Complex PCI through TRA?

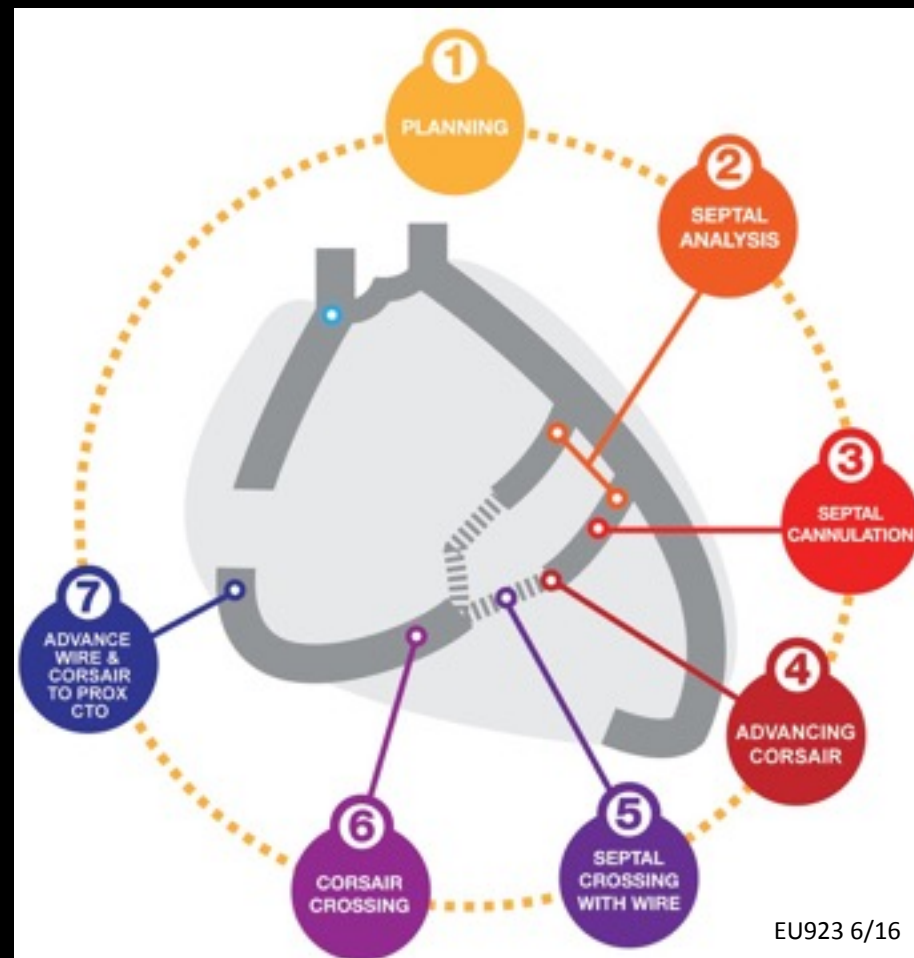
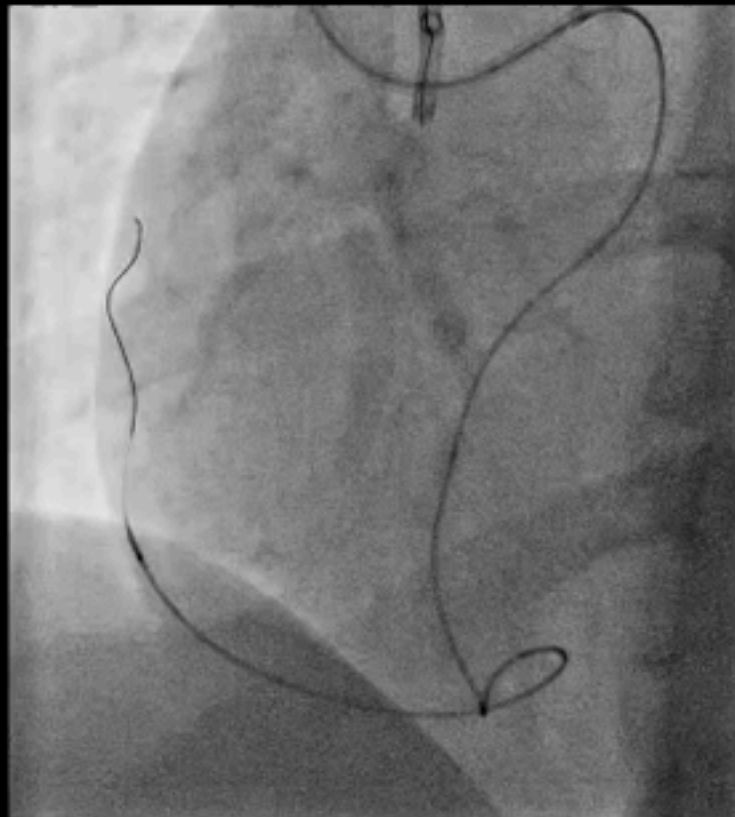


# Complex PCI through TRA?



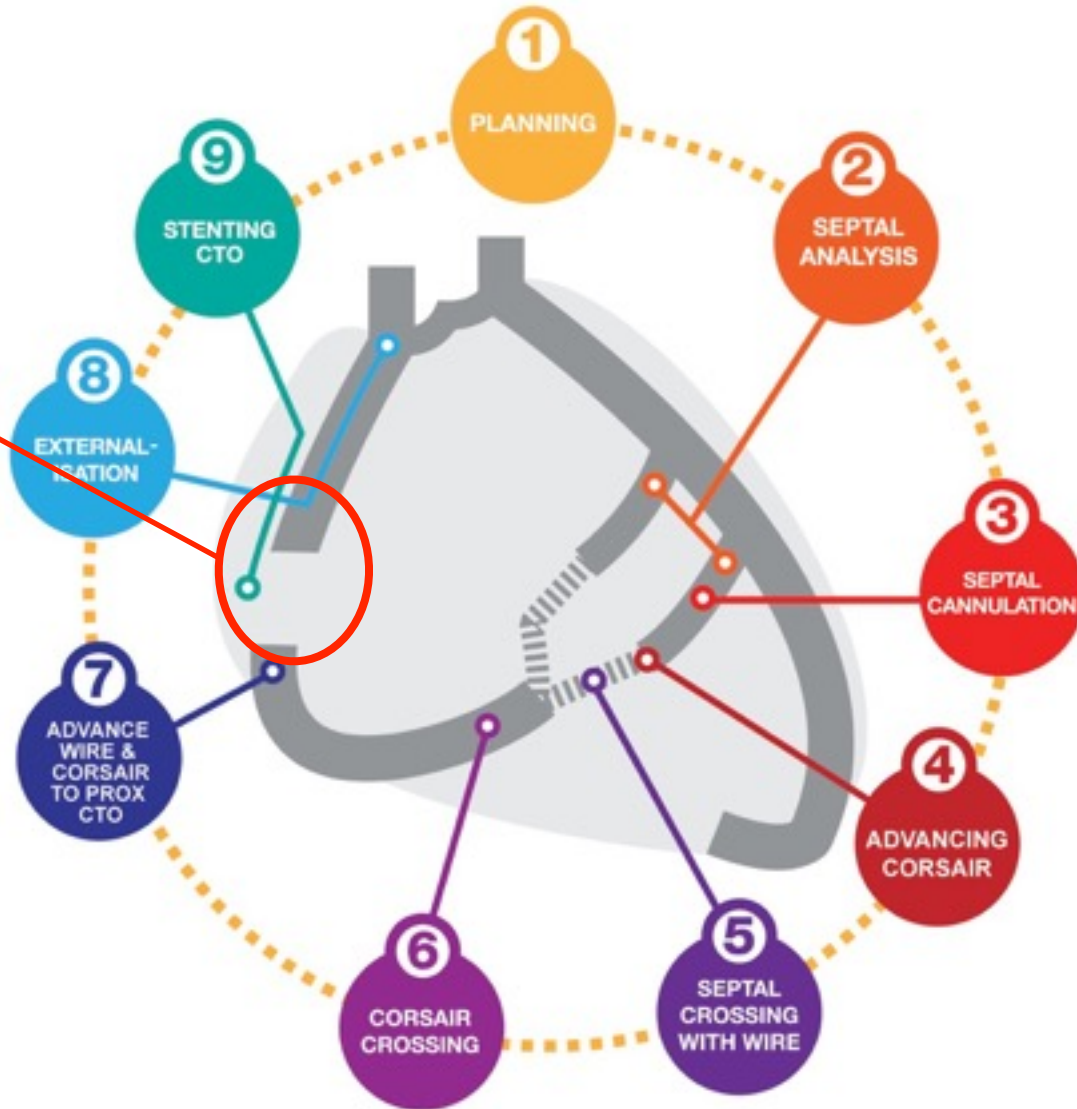


# Complex PCI through TRA?

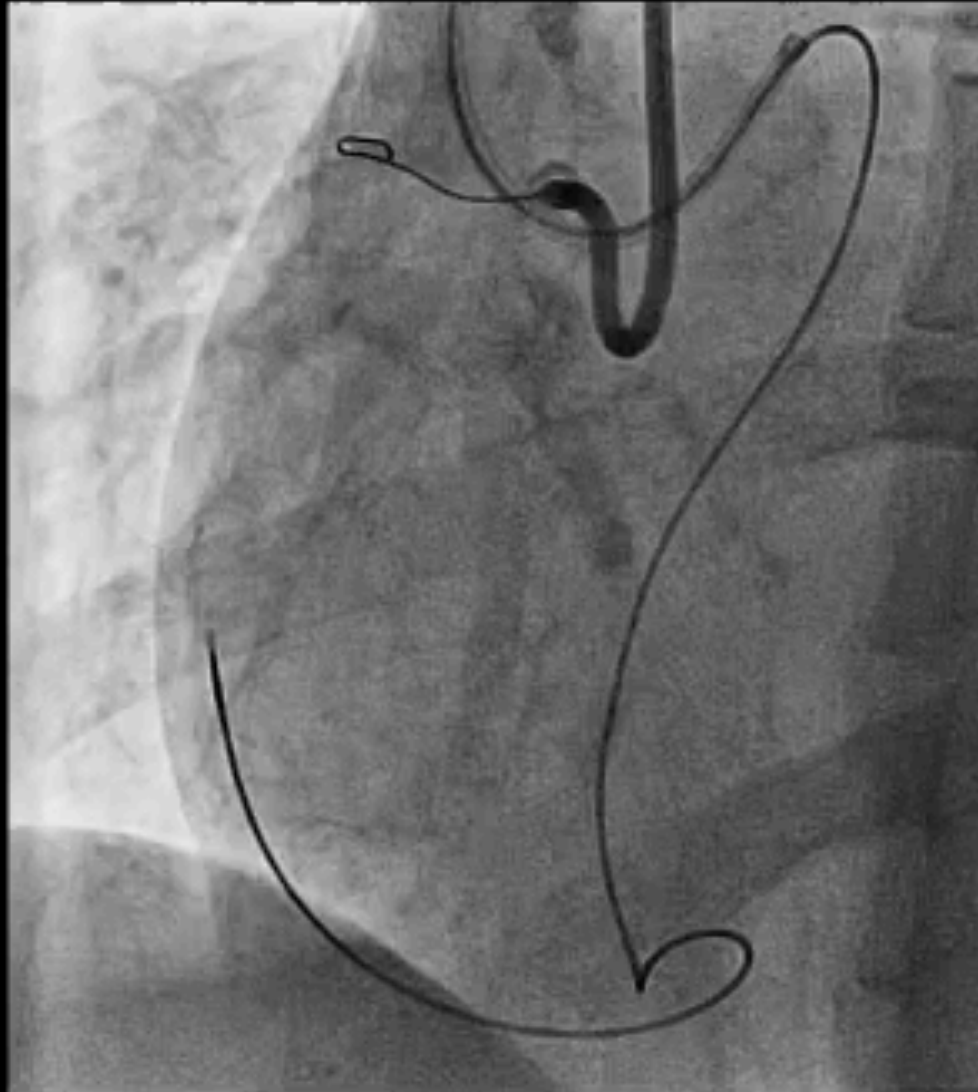


# Complex PCI through TRA?

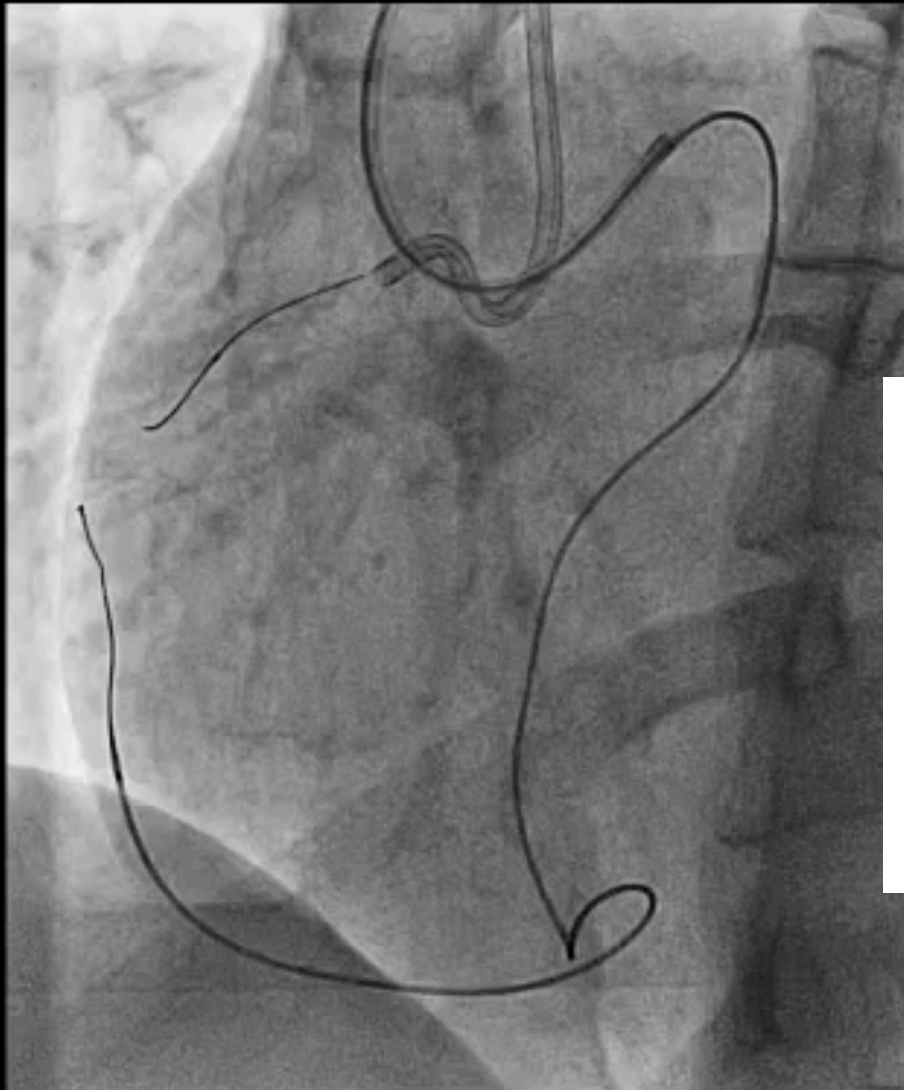
Crossing RWE  
or RDR



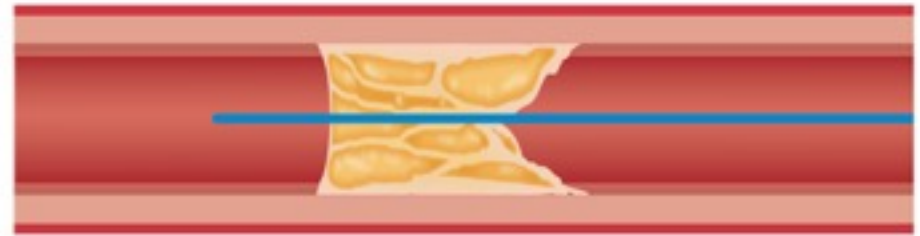
# Complex PCI through TRA?



# Complex PCI through TRA?



**True to True Wire Selection:**



Fielder XT



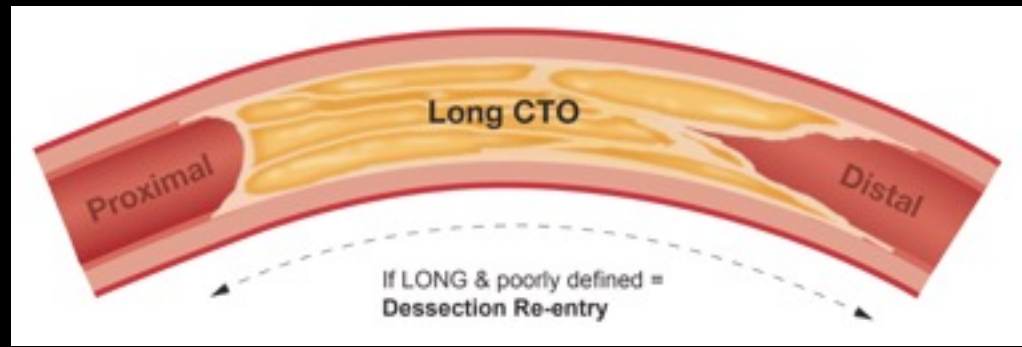
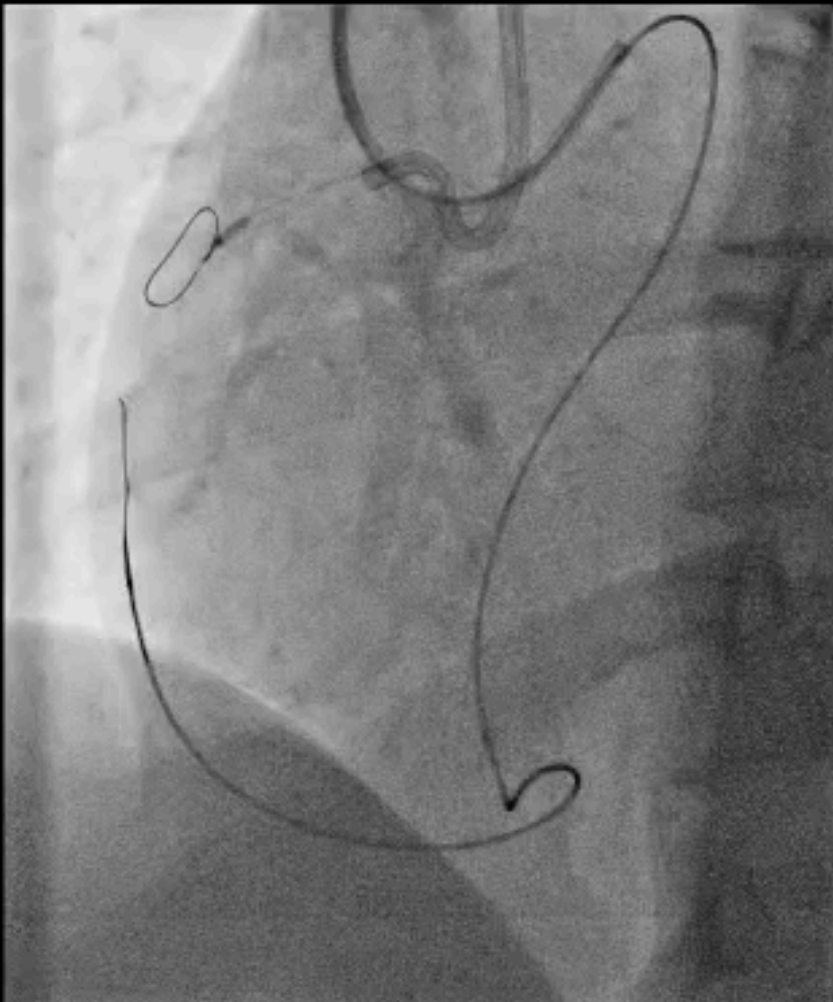
Pilot 200



Confianza Pro 12



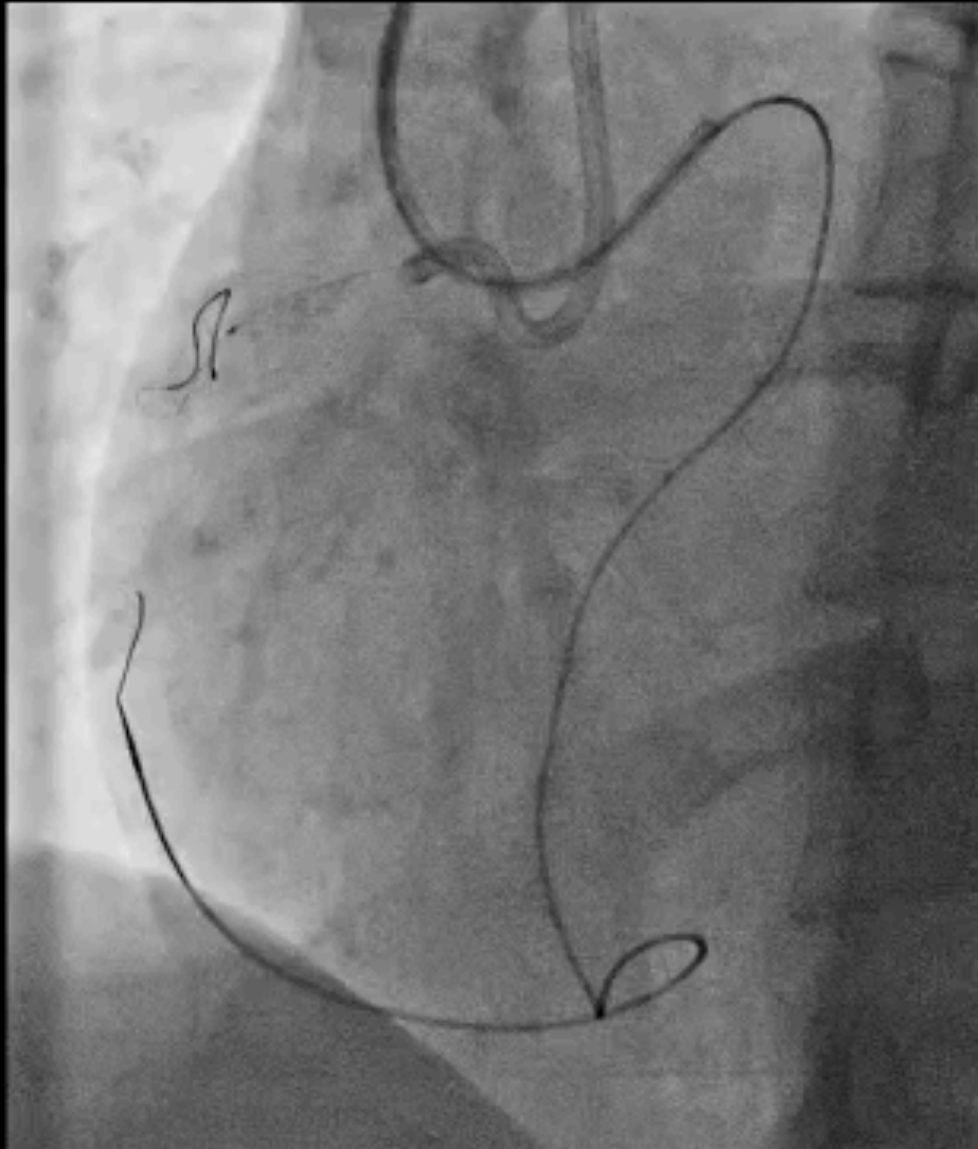
# Complex PCI through TRA?



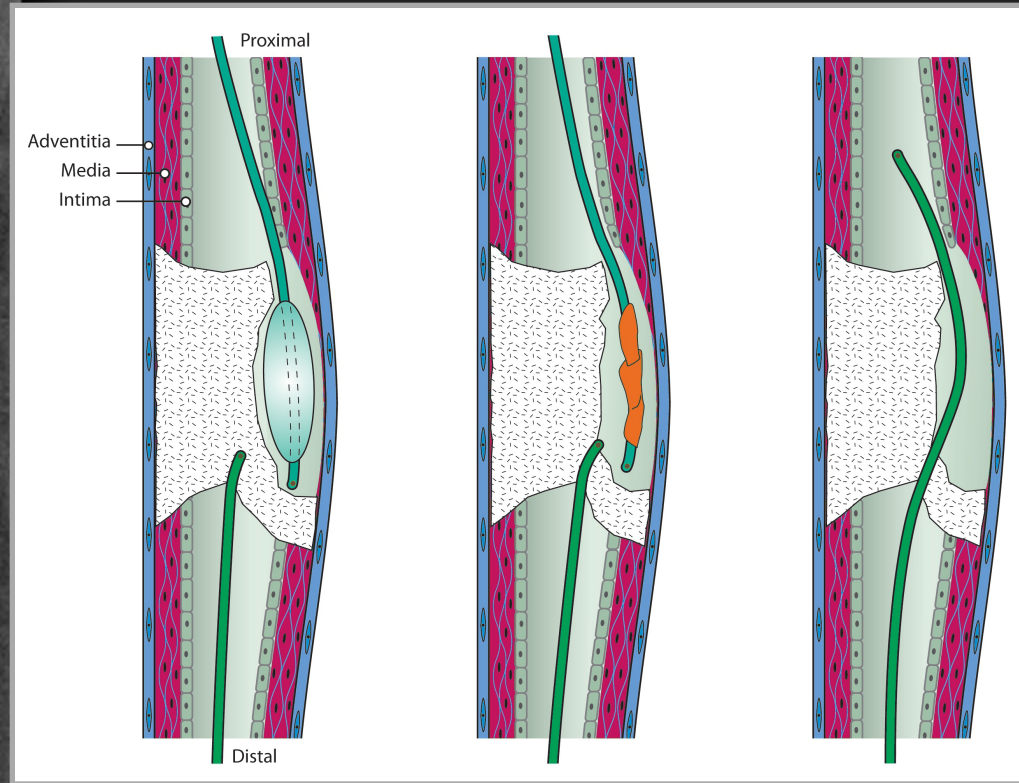
If LONG ambiguous  
and / or poorly defined:  
Dissection Re-entry



# Complex PCI through TRA?



# Complex PCI through TRA?



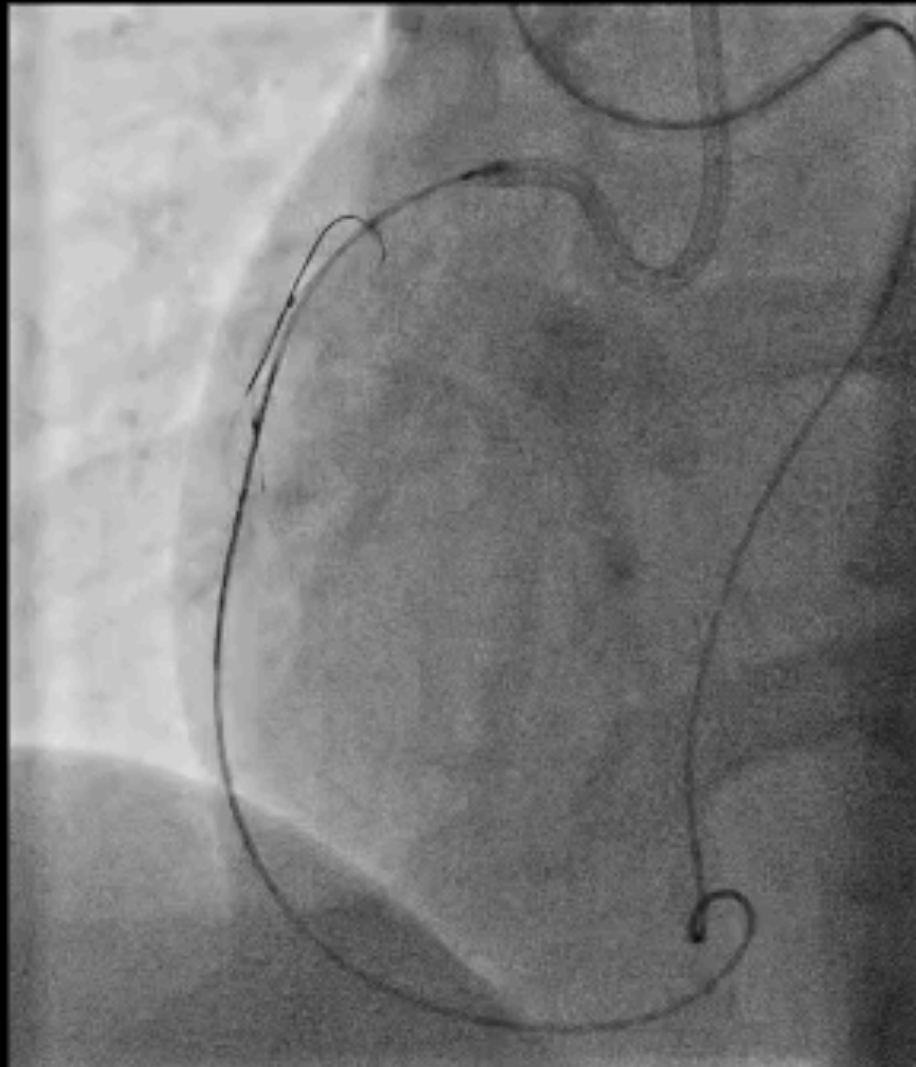
# Complex PCI through TRA?



# Complex PCI through TRA?

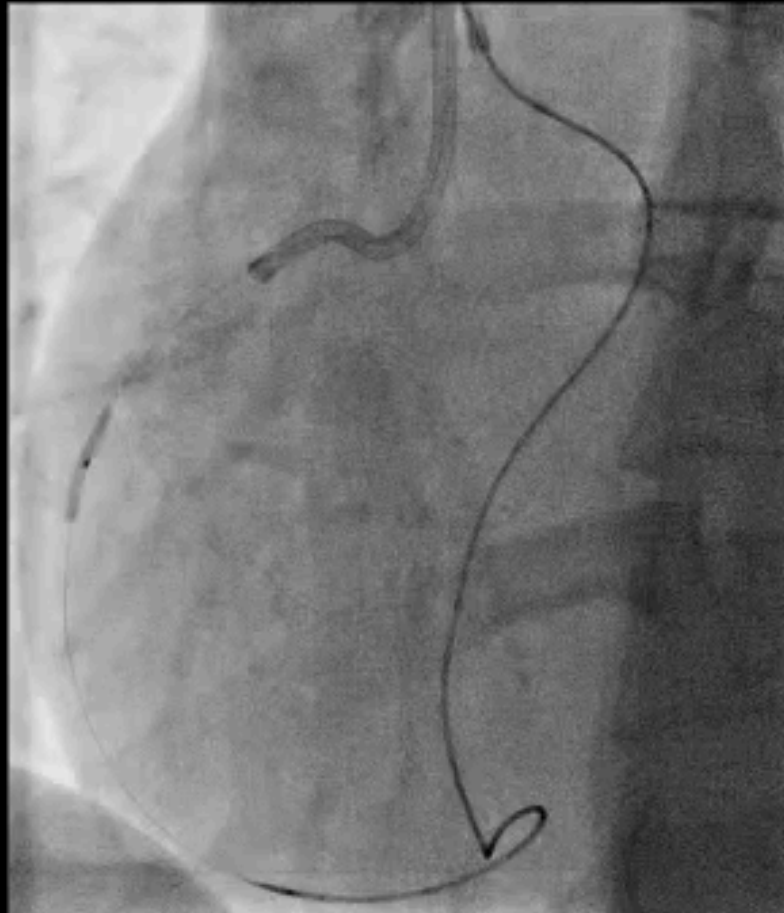


# Complex PCI through TRA?

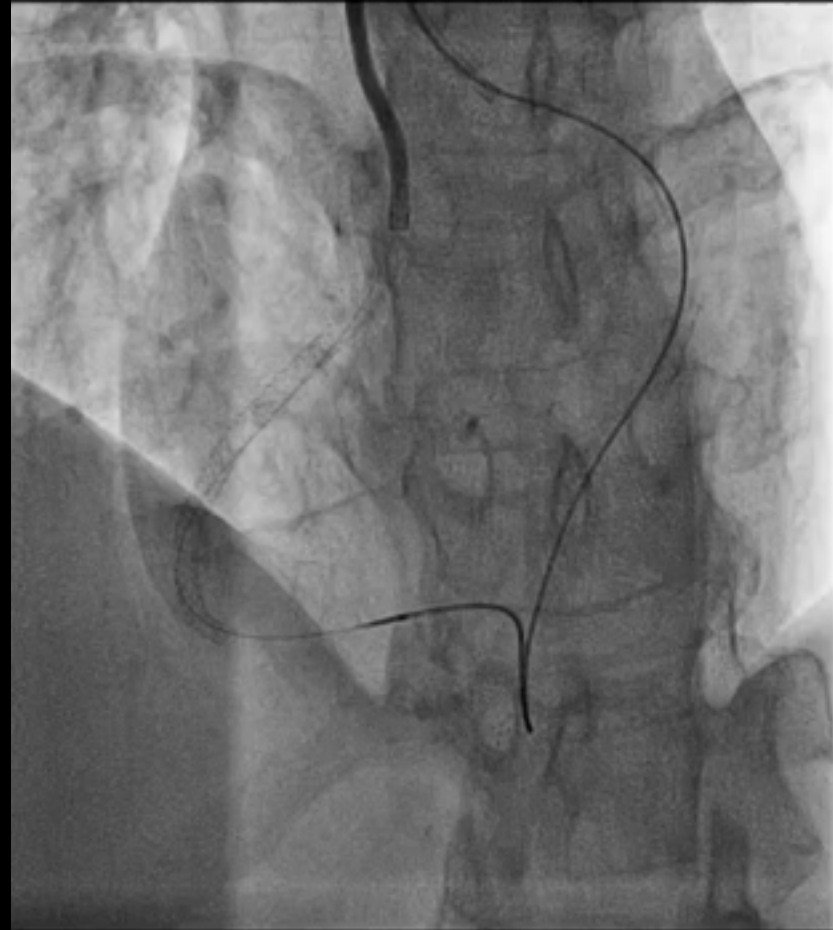




# Complex PCI through TRA?

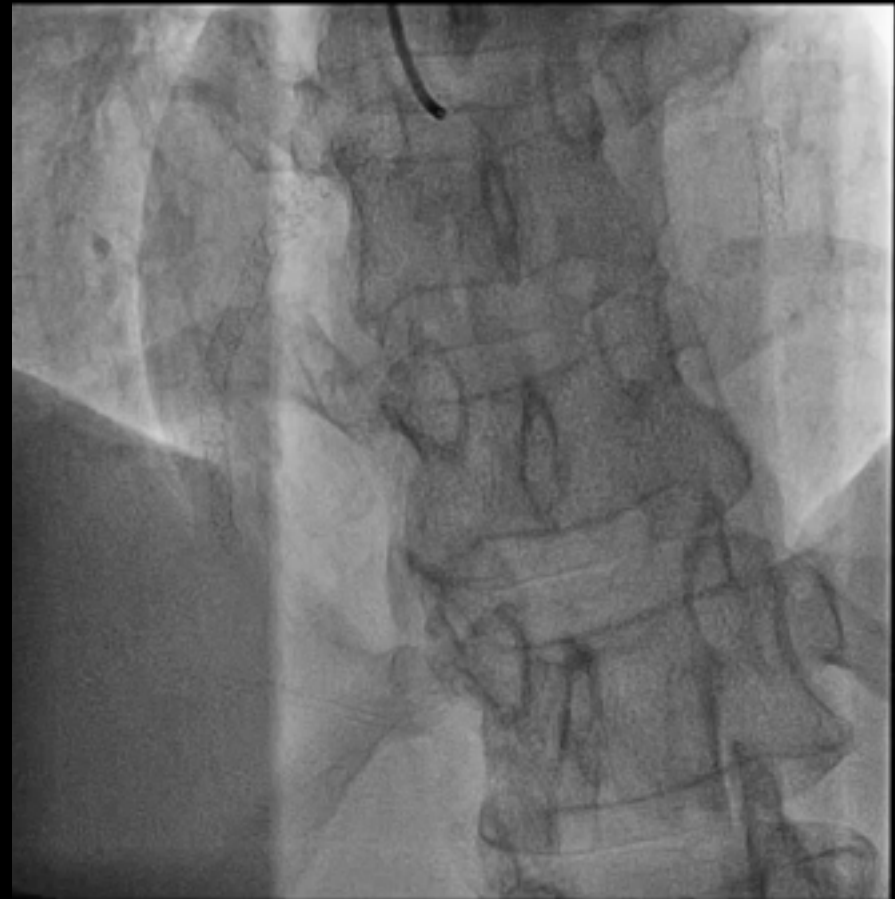
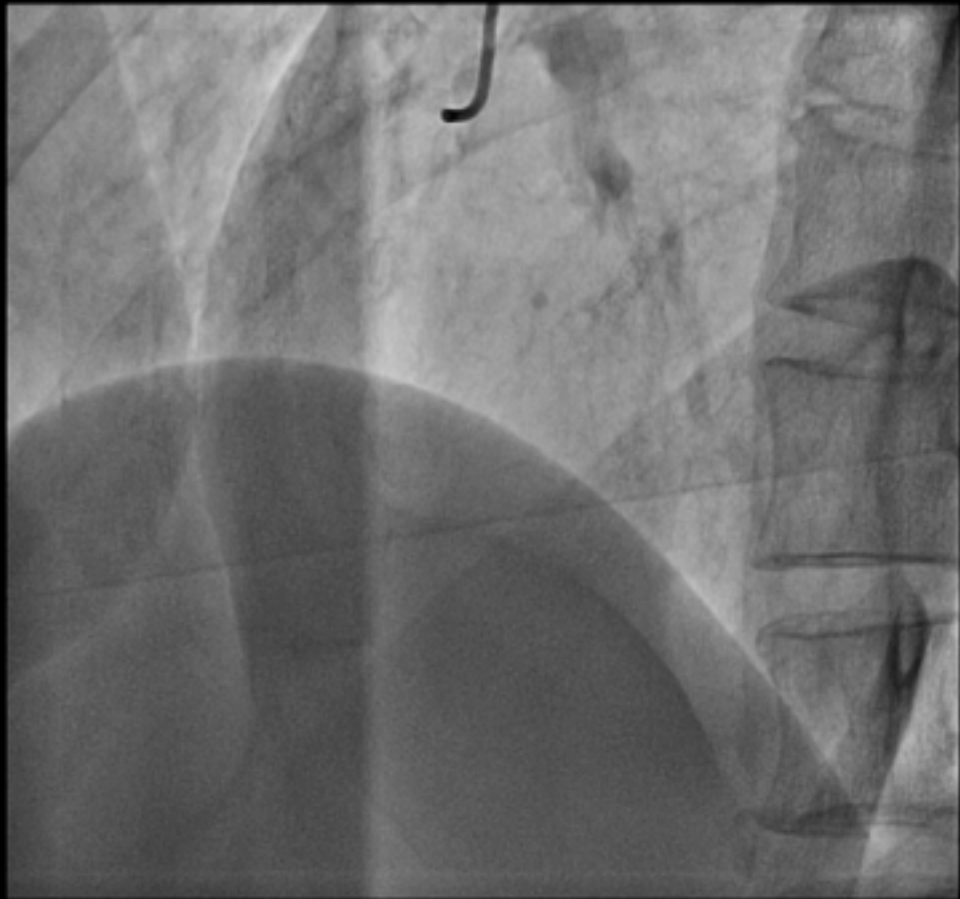


# Complex PCI through TRA?



# Complex PCI through TRA?

## M2 control

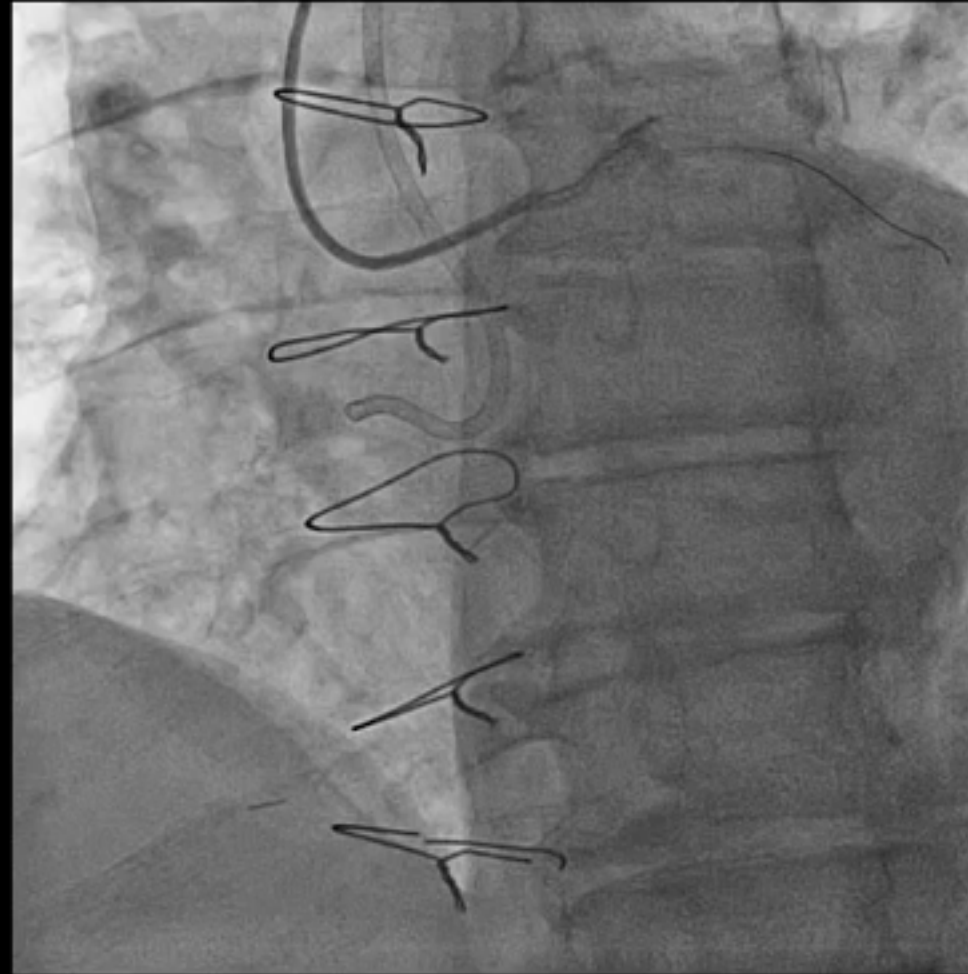
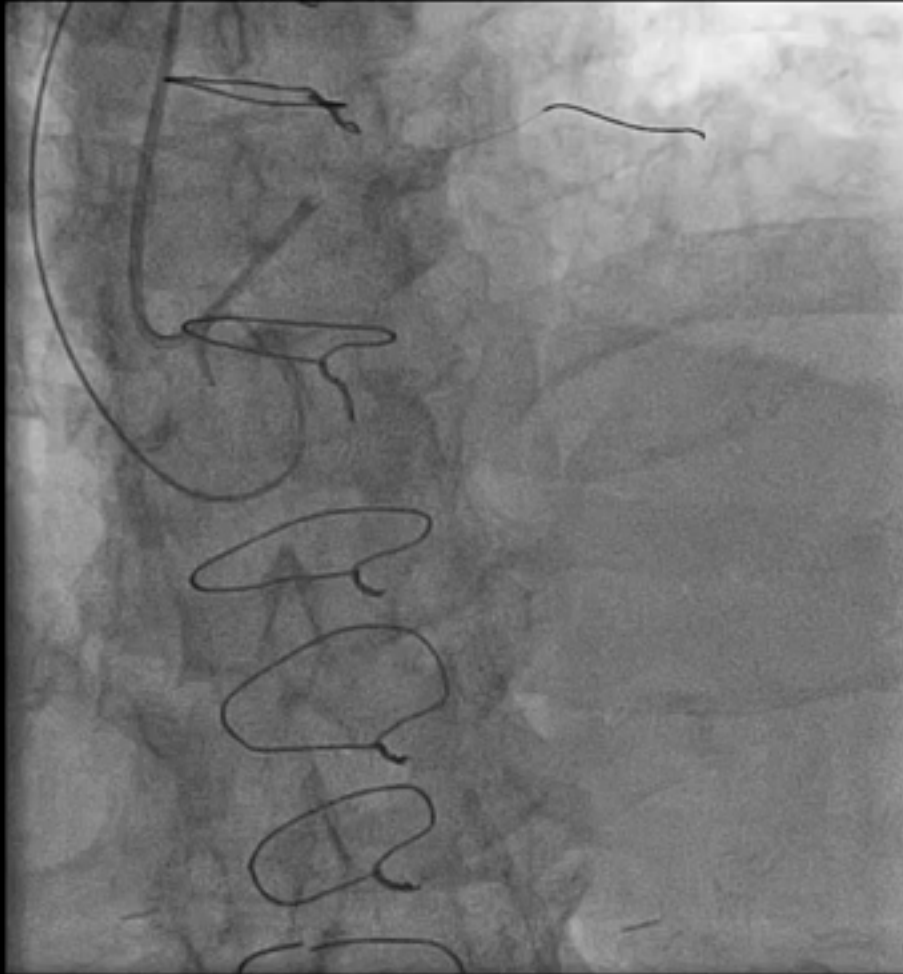


# Complex PCI through TRA?

- 69 y.o Man
- Ex-Smoker, HBP, Family history CAD
- 2000 : RCA PCI; 2002 : CABGx3 (LIMA-LAD / SVG-Int. / SVG-RCA)
- Dyspnea, Fatigue
- MIBI : Inferior ischemia 30%
- 12/2014 : CTP-PCI attempt (Dr Rinfret / Dr Abdellaoui) Failure of AWE & Retrograde

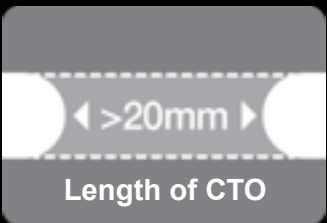
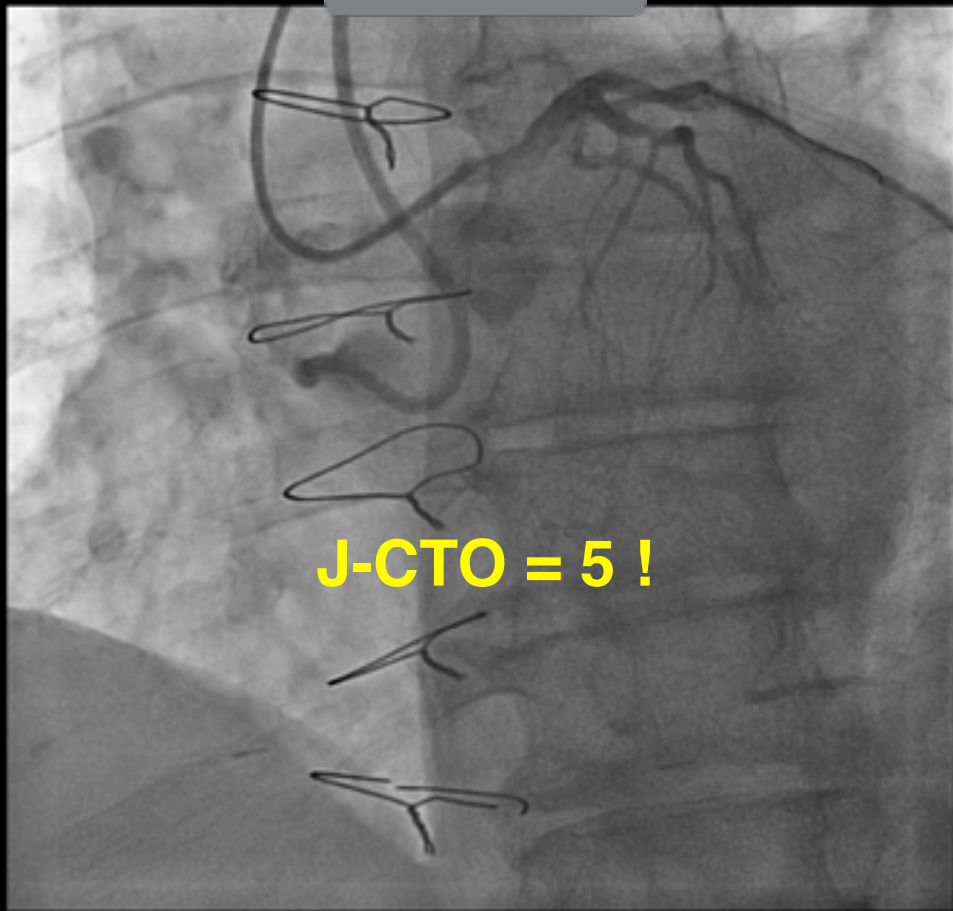
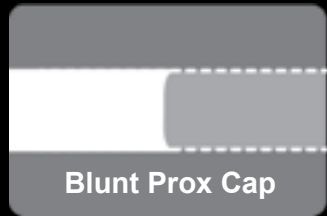
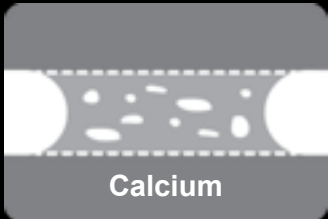
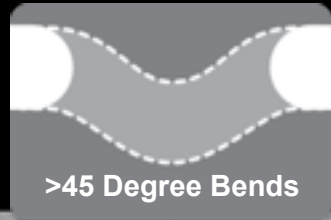


# Complex PCI through TRA?

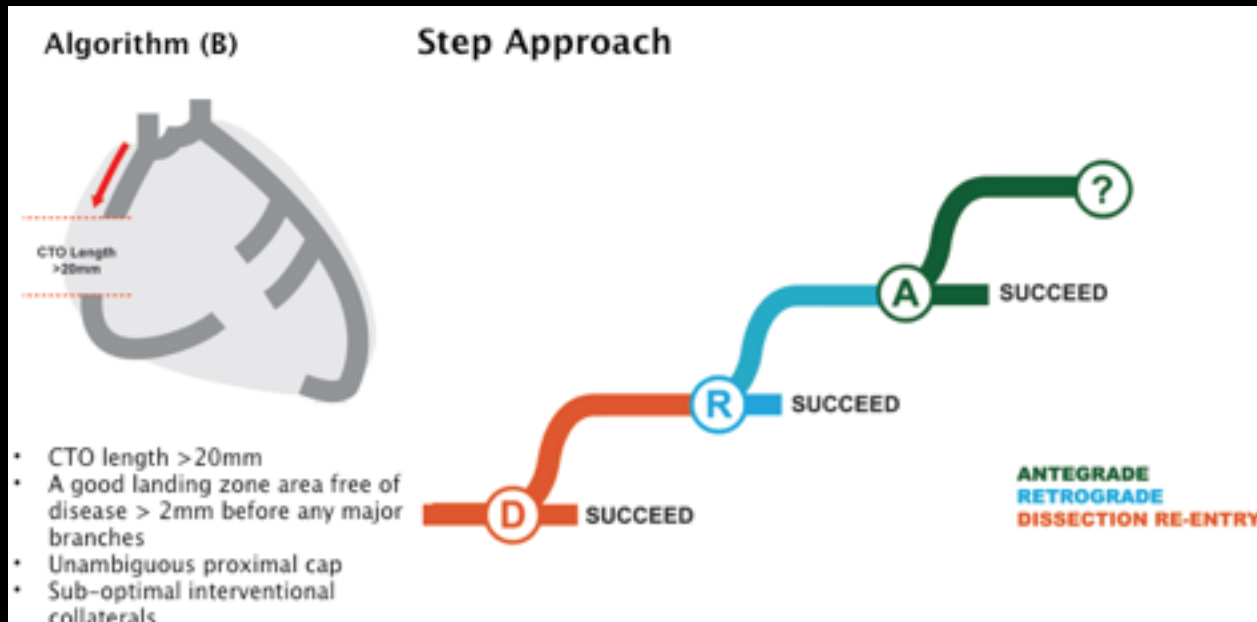




# Complex PCI through TRA?

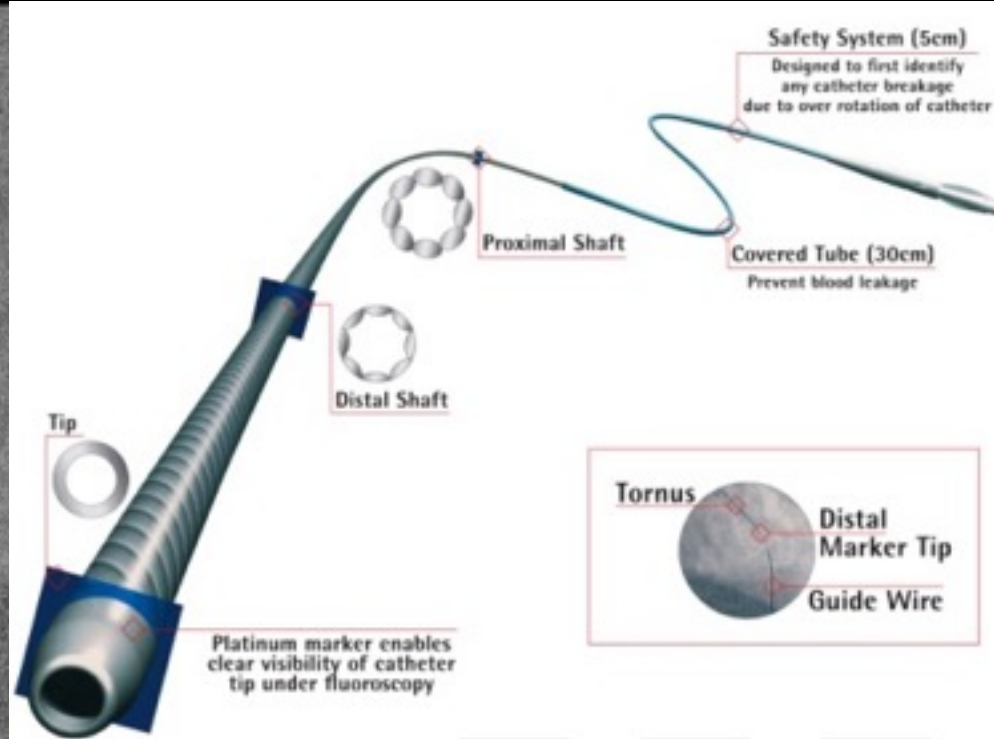
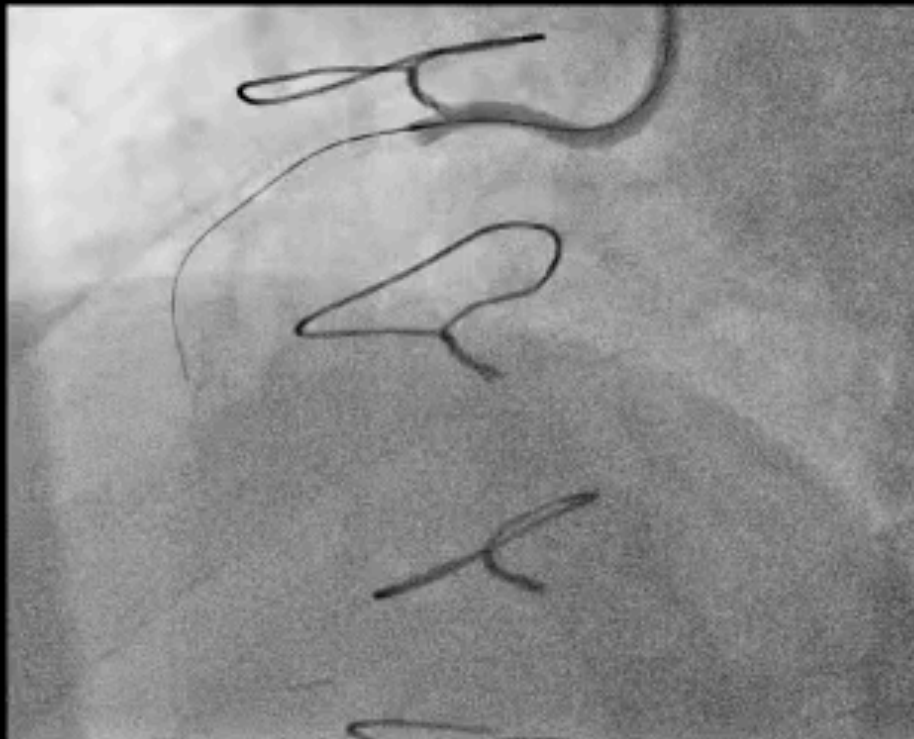


# Complex PCI through TRA?



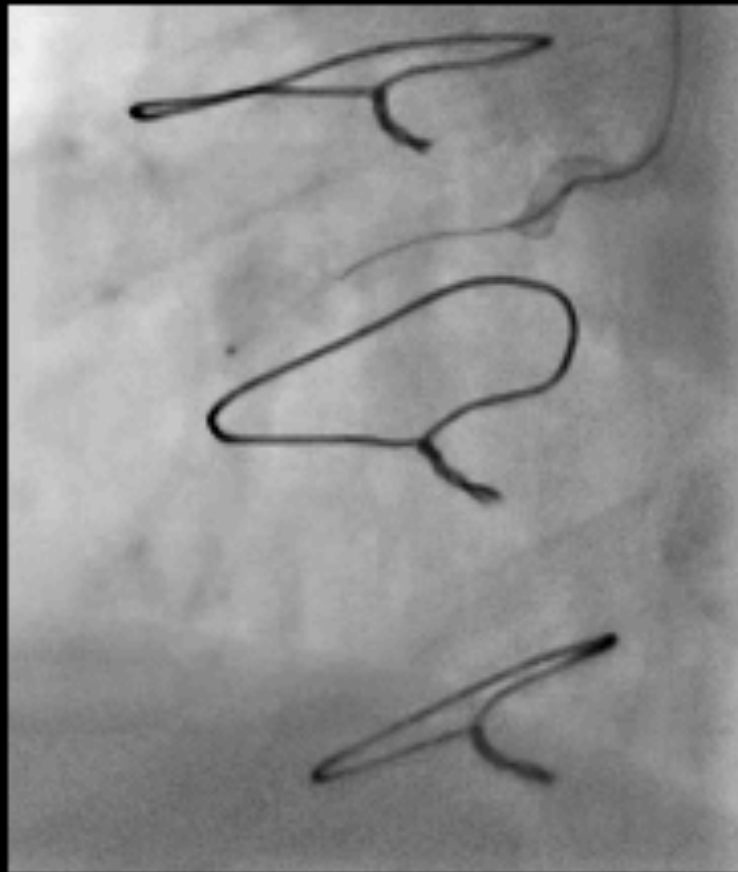
# Complex PCI through TRA?

## Tornus®

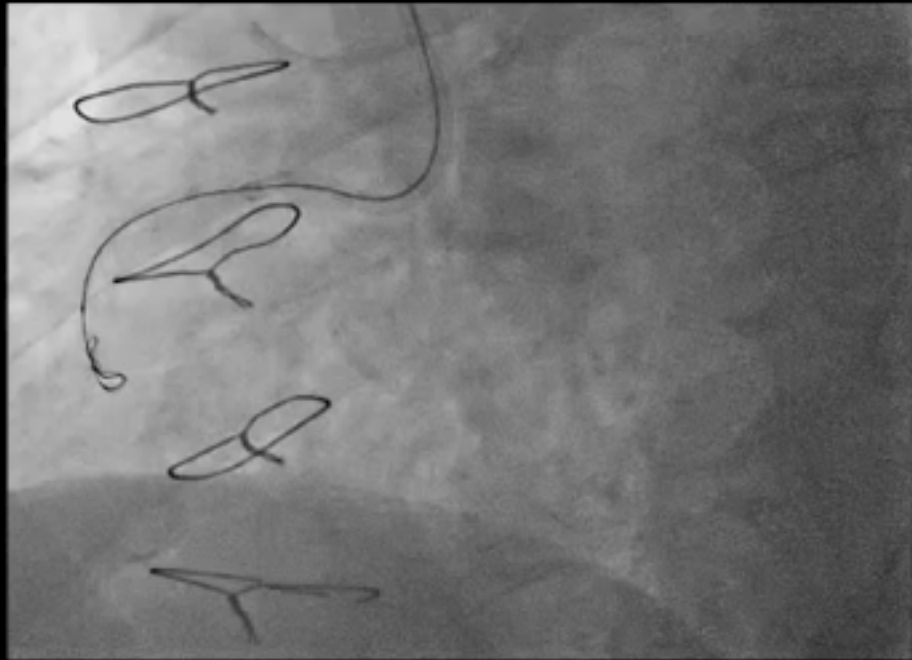


# Complex PCI through TRA?

**How to redirect?**



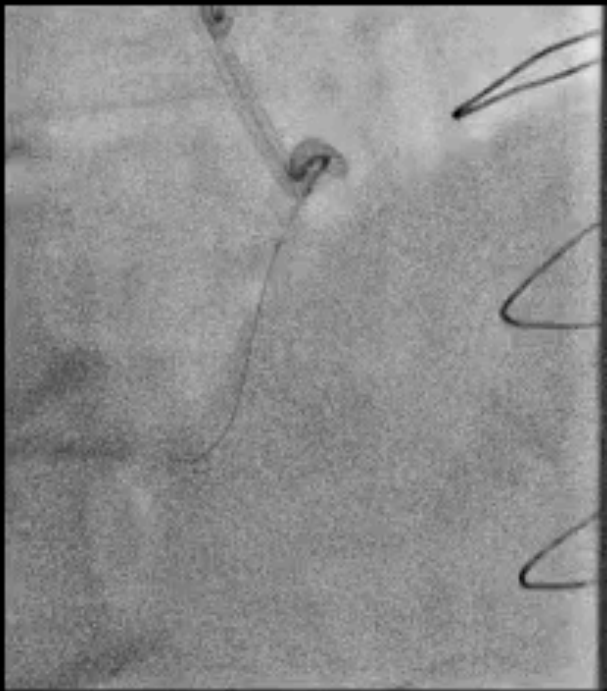
# Complex PCI through TRA?





# Complex PCI through TRA?

**Pilot®200 Redirect**

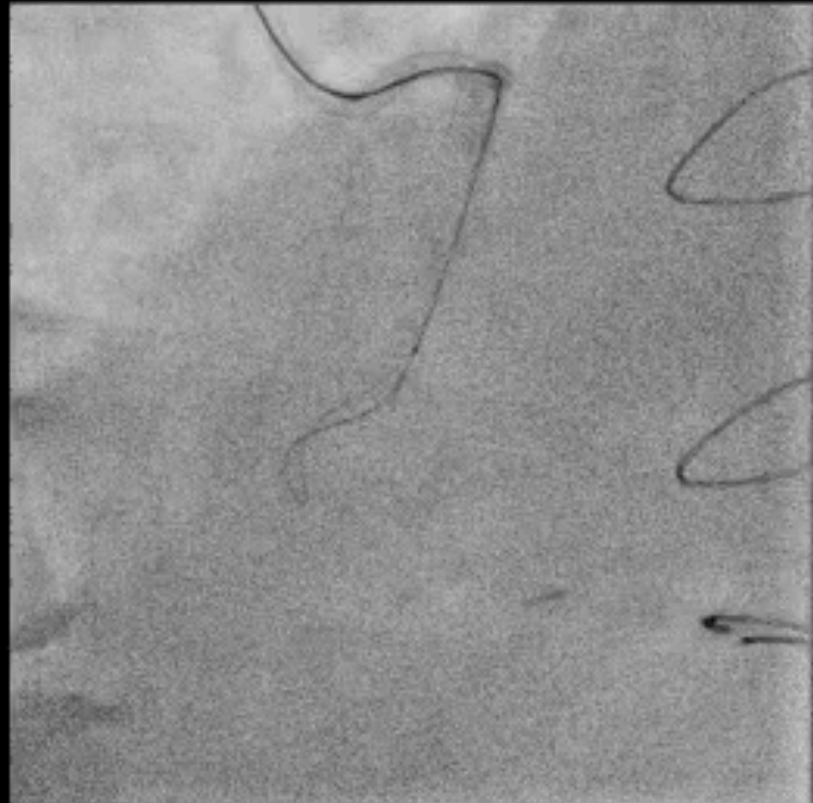


**Knuckle Fielder XTA®  
follows vessel architecture**

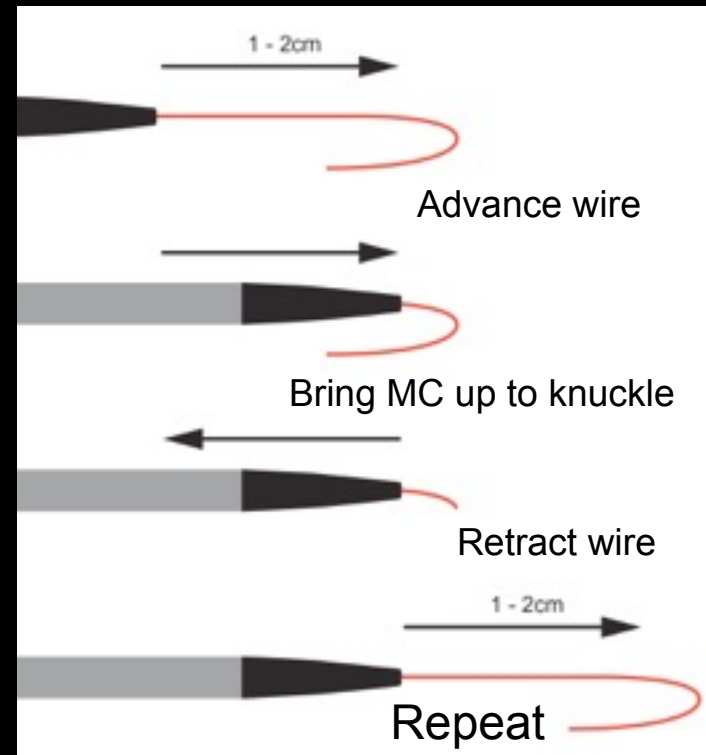
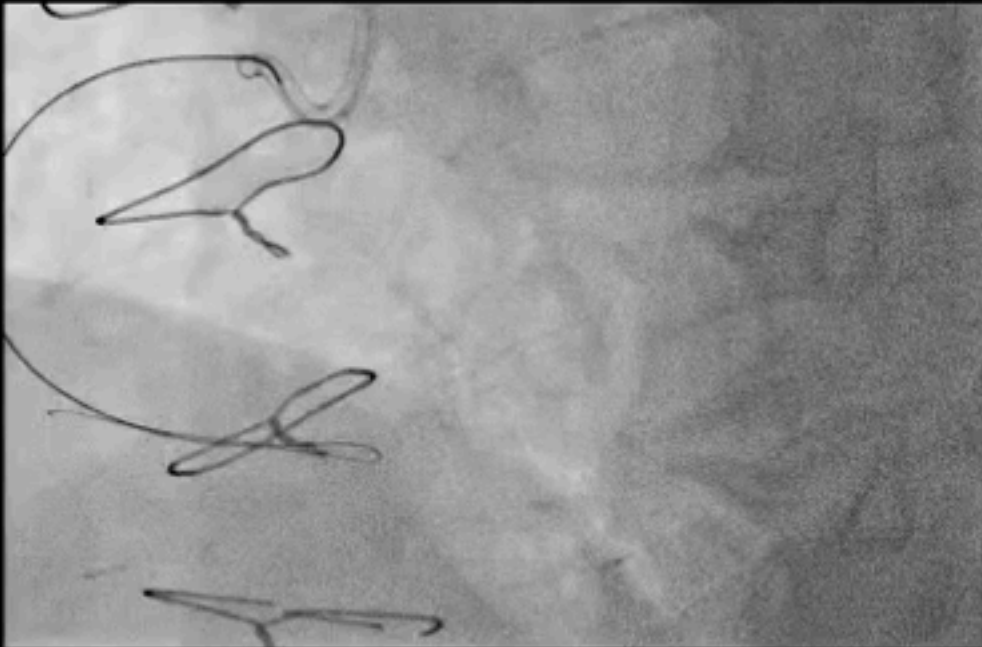


# Complex PCI through TRA?

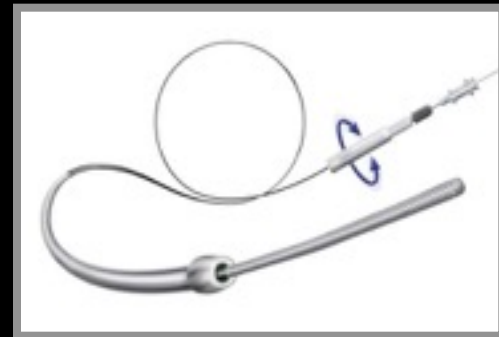
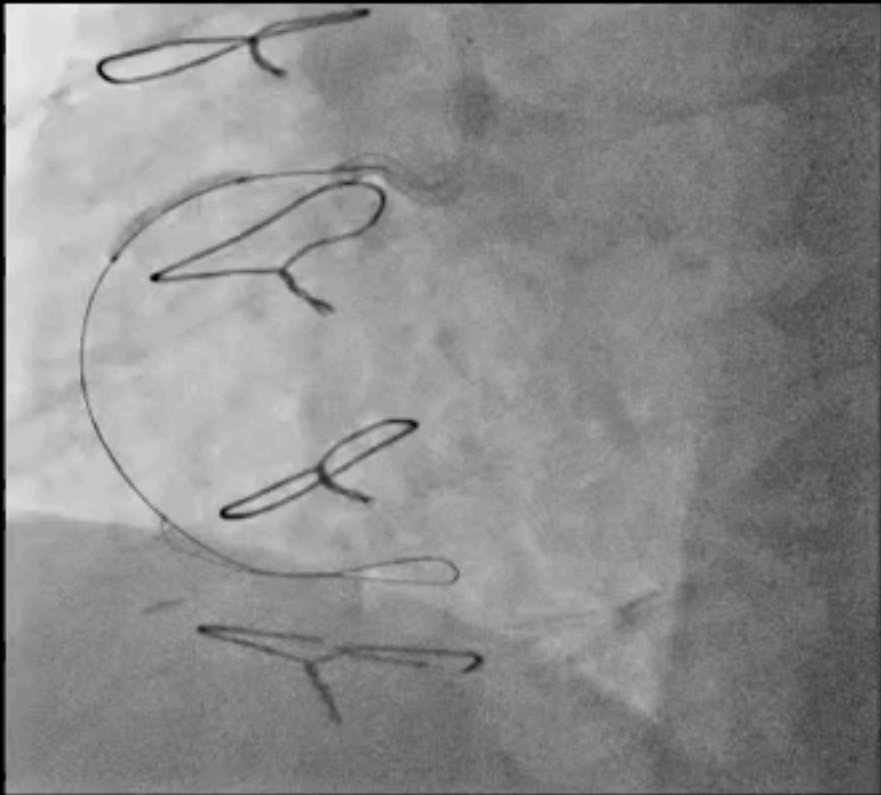
**Knuckle Fielder XTA®  
follows vessel architecture**



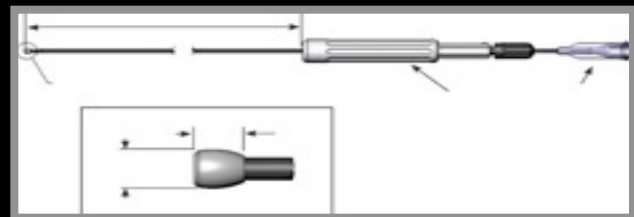
# Complex PCI through TRA?



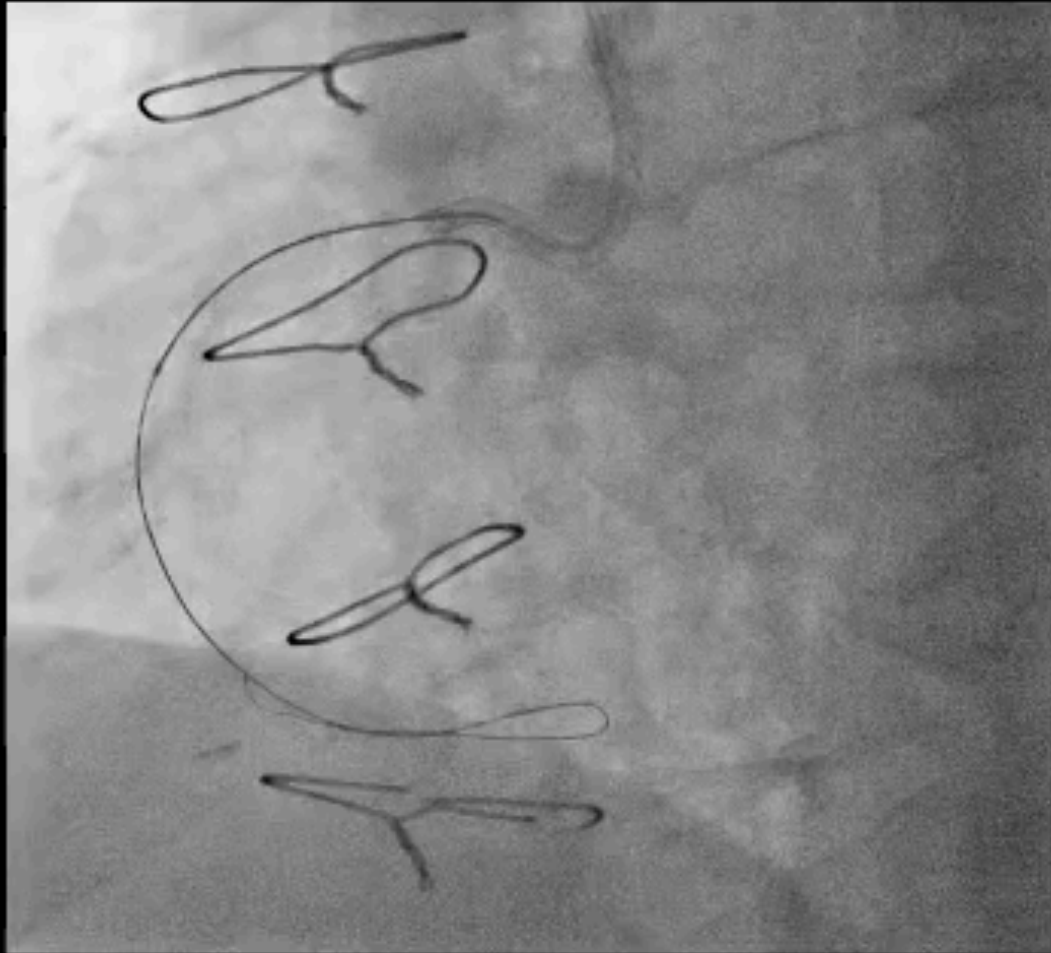
# Complex PCI through TRA?



**Proximal Cap preparation  
for CrossBoss® advancement**



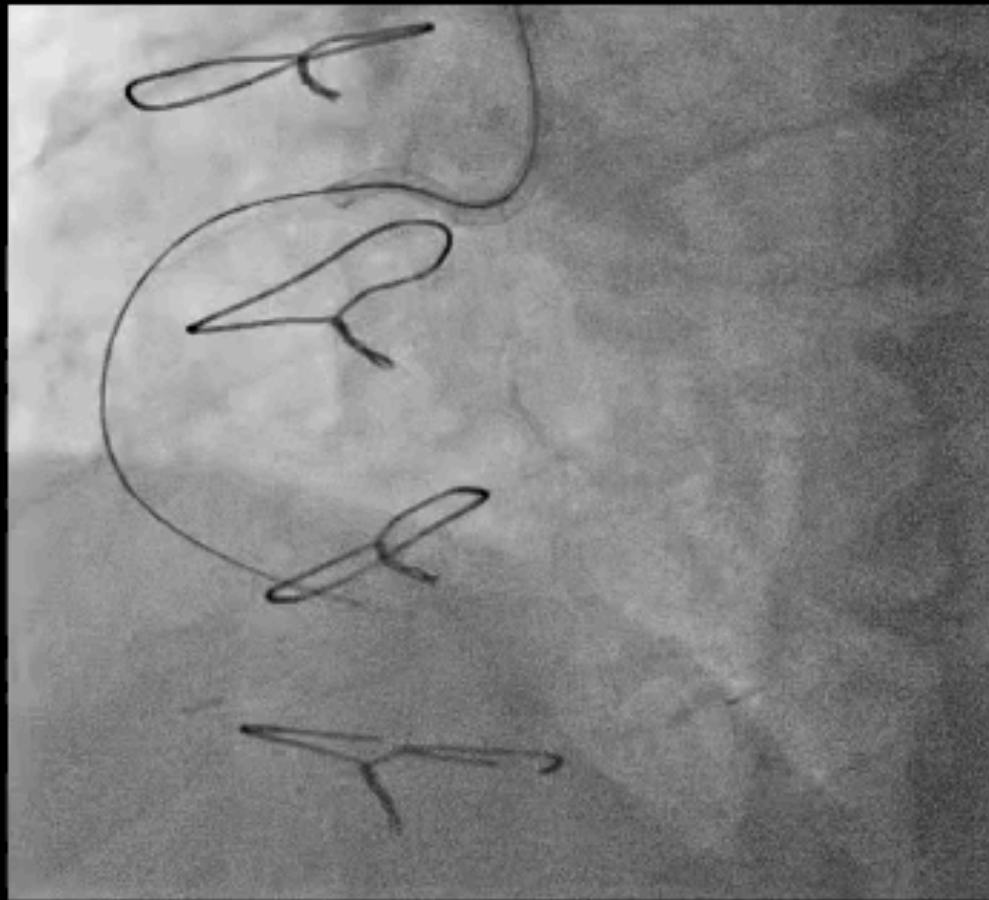
# Complex PCI through TRA?





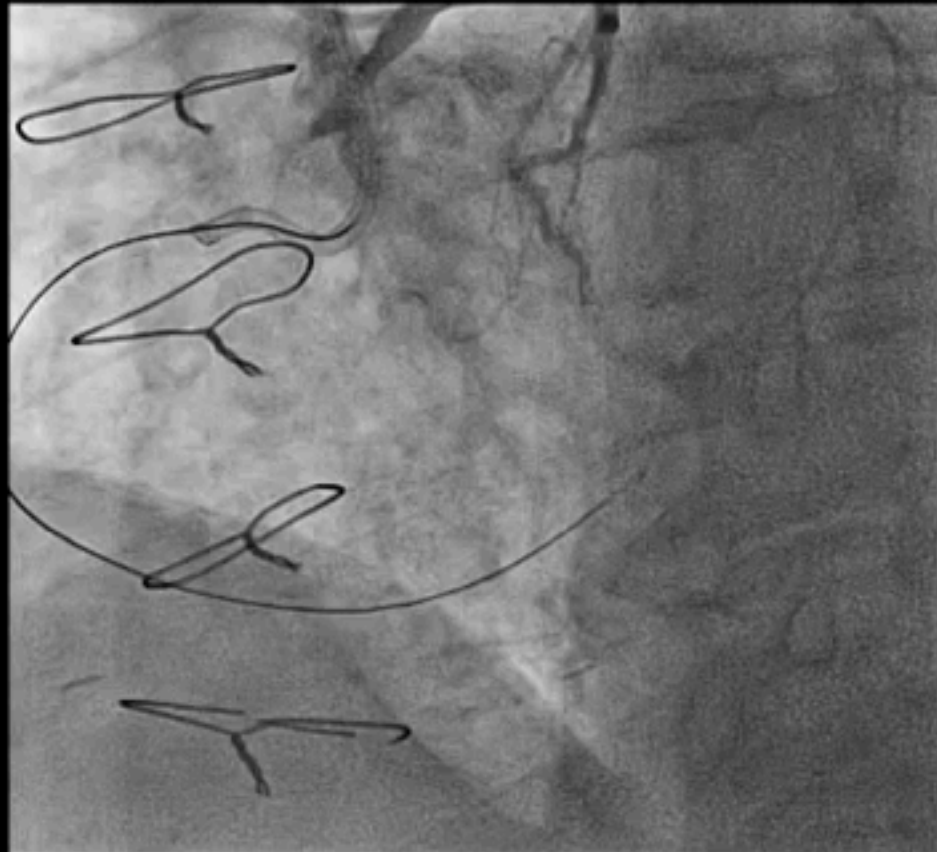
# Complex PCI through TRA?

**Create « controlled & dry » dissection  
with CrossBoss® catheter**

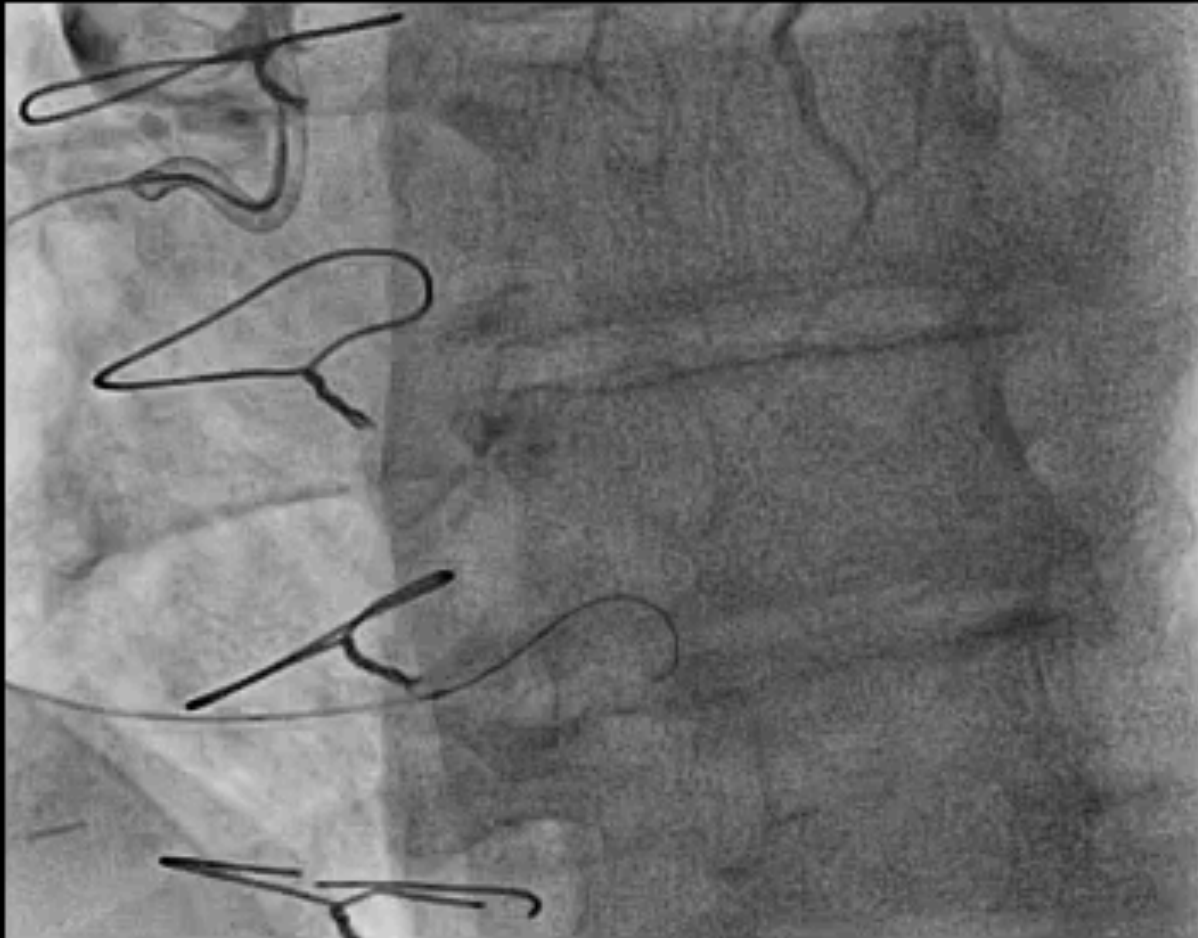


# Complex PCI through TRA?

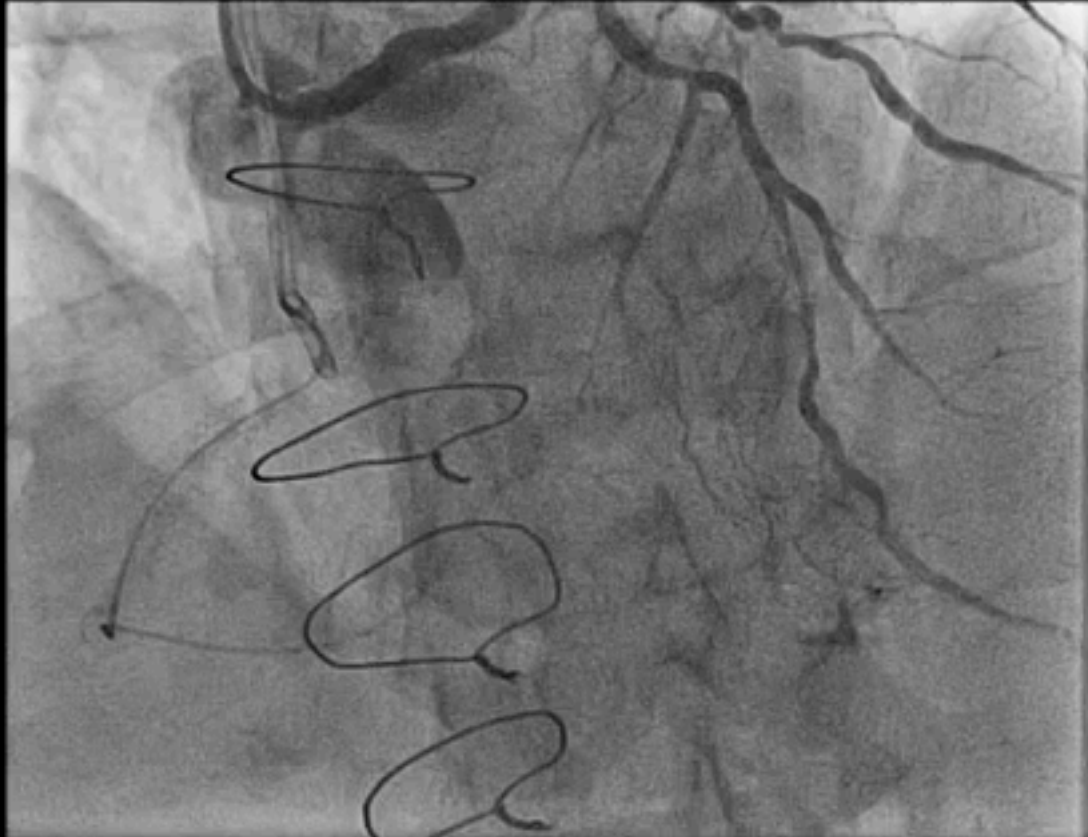
**Need for redirect  
CrossBoss® catheter**



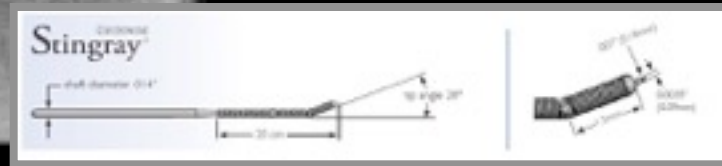
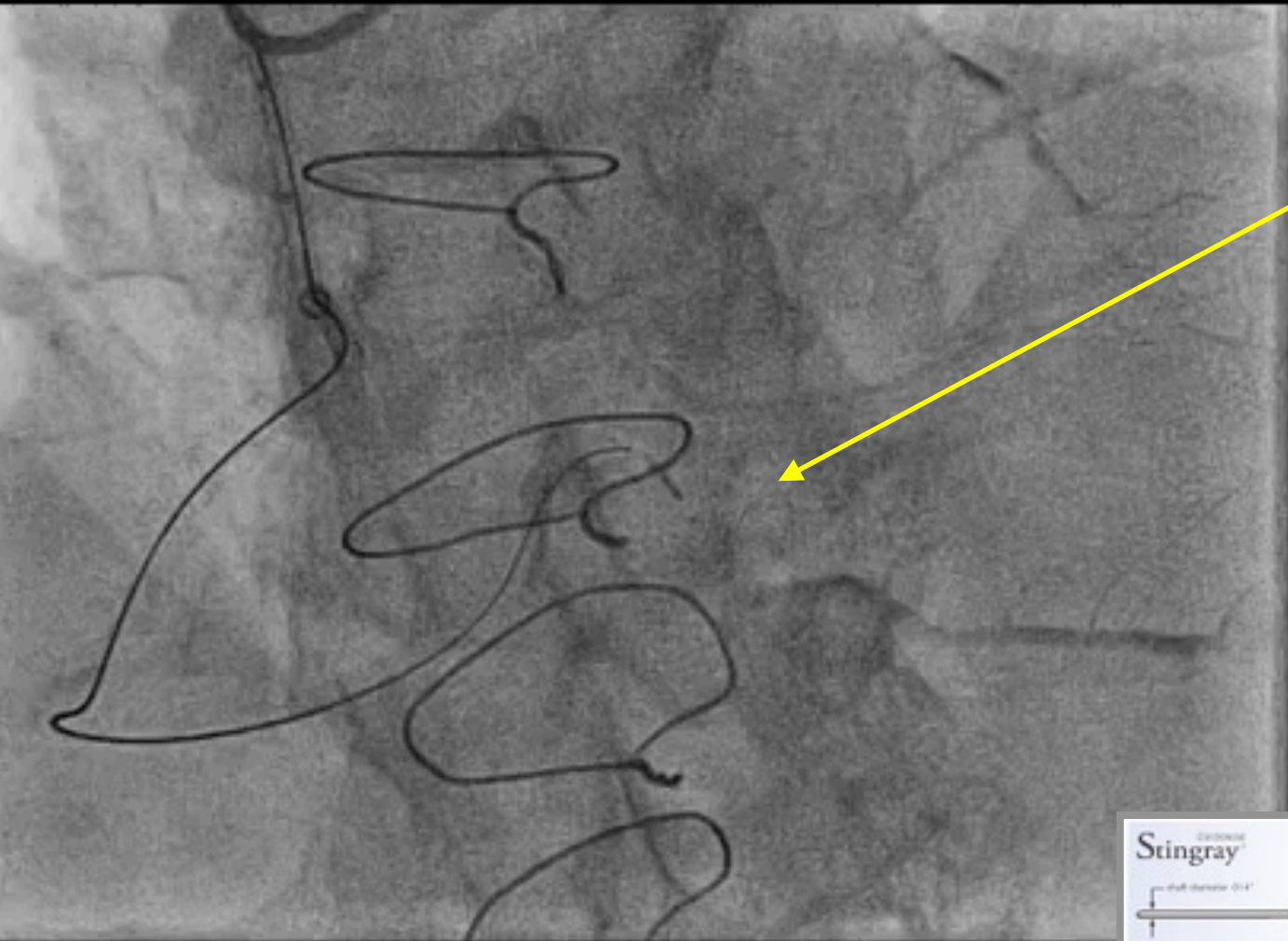
# Complex PCI through TRA?



# Complex PCI through TRA?

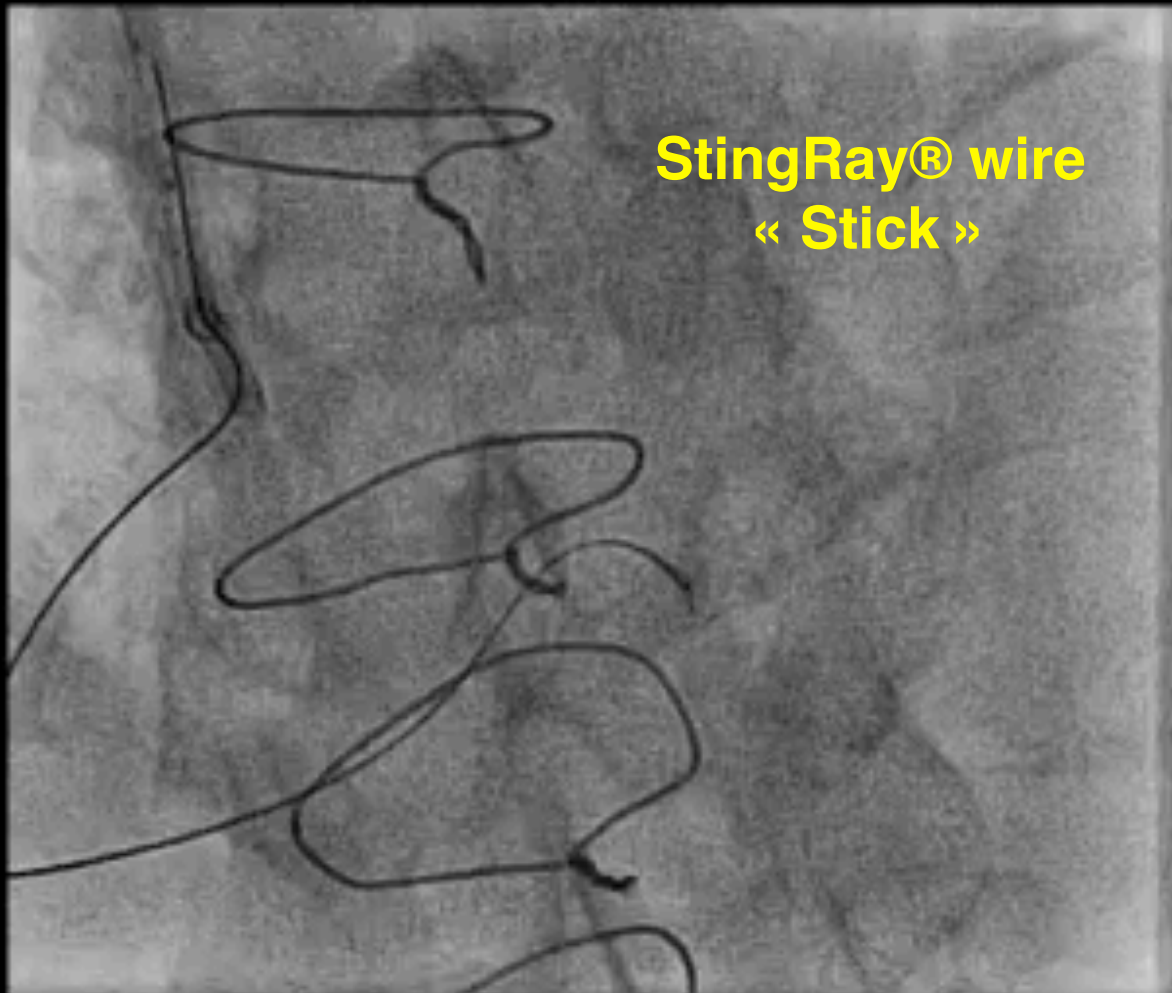


# Complex PCI through TRA?

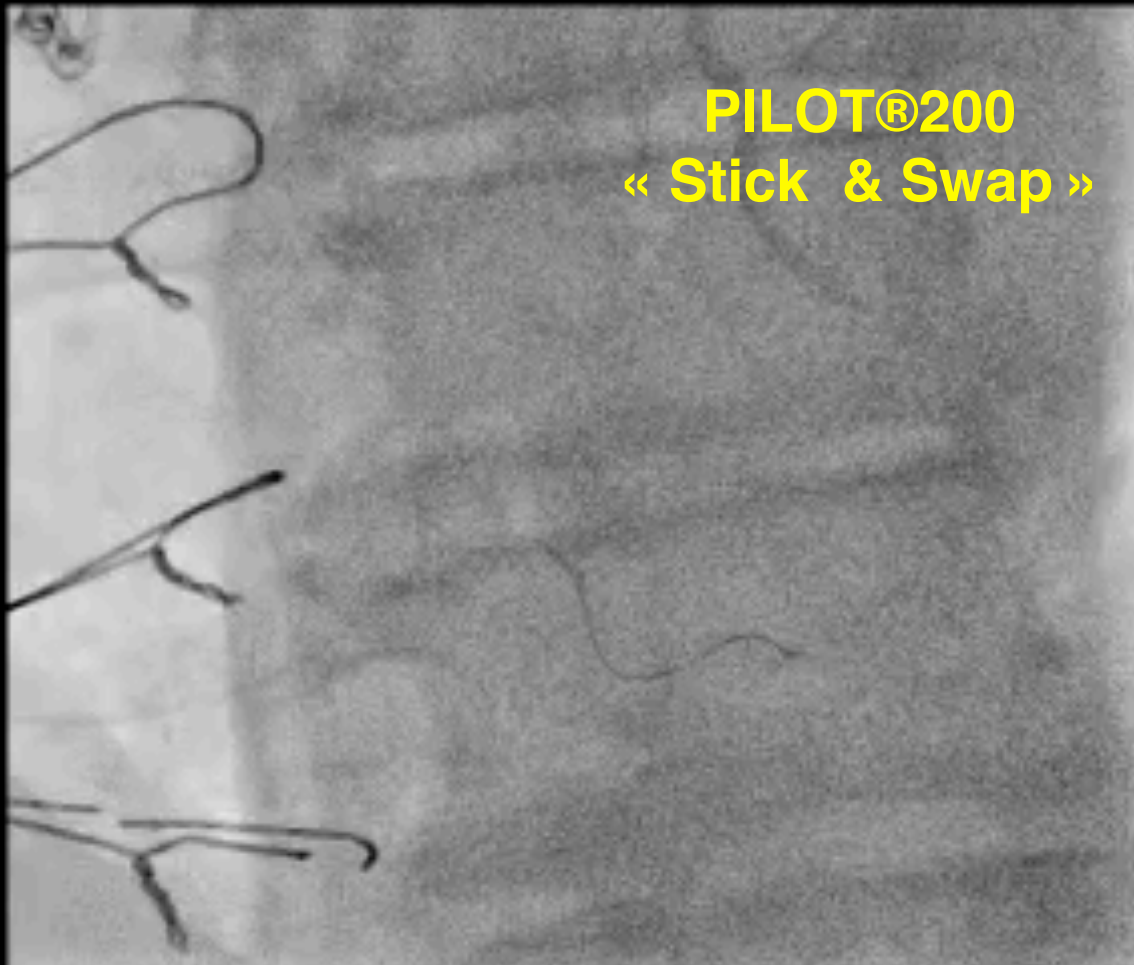




# Complex PCI through TRA?



# Complex PCI through TRA?



# Complex PCI through TRA?

**Exchange PILOT®200 for  
BHW® with Finecross**



# Complex PCI through TRA?







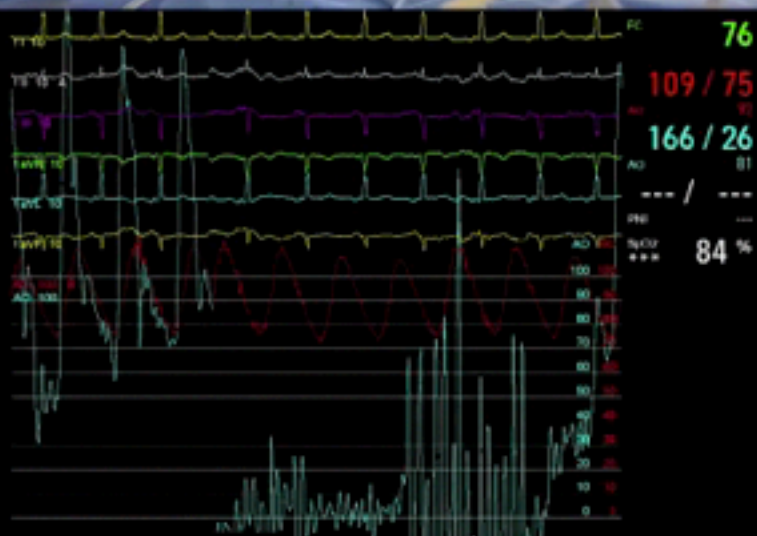
\* 05/11/1952  
 10/03/2016  
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H

GHM Grenoble I.C.  
 Faurie, Benjamin,  
 AXIOM-As  
 VC21B 1504  
 H  
 /com/III



R



Scopie HDR

cm 25  
 A  
 D 45  
 LAO 20° / CRAN 6°

RB 16  
 DDO 60

WC 19  
 WW 14



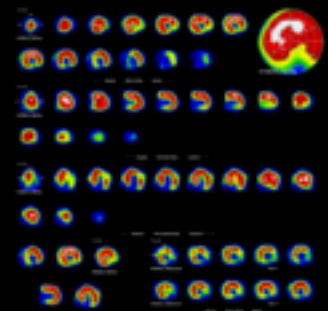


Zoom Enhancement Show Toolbars



# Septal artery rotablation for Ipsilateral retrograde Cx CTO

MIBI scan



# Keypoints

- Hybrid strategy
- Ipsilateral retrograde case
- Bilateral TRA with large bore (8F) guiding catheters
- sheathless fashion
- Rotablator on donor artery (septal)
- Day 1 Discharged

# Feasibility of TRA for CTO PCI?



## The Hybrid algorithm for the treatment of Chronic Total Occlusions in Europe: the RECHARGE Registry

Joren MAEREMANS, MSc (1), Simon WALSH, MD (2), Paul KNAAPEN, MD, PhD (3), Alexandre AVRAN, MD (4), Colm HANRATTY, MD (2), Benjamin FAURIE, MD, PhD (5), Pierfrancesco AGOSTONI, MD (6), Erwan BRESSOLLETTE, MD (7), James SPRATT, MD (8), Peter KAYAERT, MD (9), Alan BAGNALL, MD (10), Dave SMITH, MD (11), Margaret MCENTEGART, MD (12), William SMITH, MD (13), Paul KELLY, MD (14), John IRVING, MD (15), Elliott SMITH, MD (16), Julian STRANGE, MD (17), Jo DENS, MD, PhD (18)

*On behalf of the RECHARGE investigators*

**J. Wintzer-Wehekind; B. Faurie**

Feasibility and safety of 8F Radial approach for chronic total occlusion interventions : Insight of RECHARGE european registry

# Feasibility of TRA for CTO PCI?

# RECHARGE



- Prospective, non-randomized registry on CTO PCI
- 4 European countries, 17 dedicated CTO-centers
- +- 1200 patients
- Validation of “The Hybrid algorithm”
- Prof. Dr. Jo Dens (PI)



**J. Wintzer-Wehekind; B. Faurie**

Feasibility and safety of 8F Radial approach for chronic total occlusion interventions : Insight of RECHARGE european registry

# Feasibility of TRA for CTO PCI?

# RECHARGE



*Tableau 2: Procedural characteristics, classified according to outcome and lesion complexity (J-CTO score).*

	8Fr R (n=44)	Overall (n=1253)	8Fr R/F (n=408)	8Fr F (n=253)	P (8Fr R-Overall)	P (8Fr R-R/F)	P (8Fr R-F)
Dual catheter injection (%)	91	77	100	78	<b>0.029</b>	<b>&lt;0.001</b>	<b>0.047</b>
Procedure time (min)*	105 (80-133)	90 (60-120)	99 (74-135)	98 (62-130)	0.051	0.843	0.329
Fluoroscopy time (min)*	<b>34</b> (21-50)	35 (21-55)	40 (25-59)	39 (22-57)	0.861	0.144	0.363
Air Kerma dose (Gray)*	1.9 (1.5-2.9)	1.6 (1.0-2.7)	1.4 (0.9-2.4)	1.6 (1.0-2.7)	<b>0.030</b>	<b>0.002</b>	<b>0.047</b>
DAP dose (Gray*cm <sup>2</sup> )*	95 (71-155)	98 (57-168)	88 (56-150)	137 (66-230)	0.702	0.208	0.069
Contrast volume (ml)*	<b>200</b> (150-300)	<b>250</b> (180-340)	300 (210-380)	<b>260</b> (200-350)	<b>0.010</b>	<b>&lt;0.001</b>	<b>&lt;0.001</b>

Mean J-CTO score

**3.1**

**2.2**

**<0.001**

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# Feasibility of TRA for CTO PCI?

**RECHARGE**

*Tableau 3: In-hospital Major Adverse Cardiac and Cerebrovascular Events (MACCE) and complications of all procedures*

	8Fr R (n=44)*	Overall (n=1253)*	8Fr R/F (n=408)	8Fr F (n=253)	P (8Fr R- Overall)	P (8Fr R- R/F)	P (8Fr R- F)
<b>MACCE (n (%))</b>	<b>3 (6.8)</b>	<b>33 (2.6)</b>	<b>15 (3.7)</b>	<b>11 (4.3)</b>	0.097	0.311	0.475
Death (n)	0 (0)	3 (0.2)	1 (0.2)	1 (0.4)	0.745	0.742	0.676
Stroke (n)	1 (2.3)	3 (0.2)	0 (0)	1 (0.4)	<b>0.017</b>	<b>0.002</b>	0.160
<i>Myocardial infarction (n)</i>	2 (4.5)	27 (2.2)	14 (3.4)	9 (3.6)	0.292	0.704	0.749
STEMI (n)	0 (0.2)	3 (0.2)	1 (0.2)	2 (0.8)	0.745	0.742	0.554
N-STEMI (n)	2 (4.5)	24 (1.9)	13 (3.2)	7 (2.8)	0.221	0.633	0.525
TVF/TVR (n)	1 (2.3)	1 (0.08)	0 (0)	0 (0)	<b>&lt;0.001</b>	<b>0.002</b>	<b>0.016</b>
<b>Other complications</b>							
<i>Life-threatening and Major bleeding (n)</i>	1 (2.3)	24 (1.9)	12 (2.9)	5 (2.0)	0.865	0.801	0.897
Access site-related (n)	<b>1 (2.3)</b>	6 (0.5)	2 (0.5)	<b>3 (1.2)</b>	0.110	0.167	0.564
Retroperitoneal hemorrhage (n)	0 (0)	2 (0.2)	2 (0.5)	0 (0)	0.791	0.642	-
Cardiac tamponade (n)	0 (0)	16 (1.3)	8 (2.0)	2 (0.8)	0.451	0.349	0.554
<i>Major vascular complication (n)</i>	<b>1 (2.3)</b>	31 (2.5)	14 (3.4)	<b>8 (3.2)</b>	0.933	0.684	0.751
Coronary (n)	1 (2.3)	23 (1.8)	10 (2.5)	5 (2.0)	0.833	0.942	0.897
Peripheral (n)	0 (0)	8 (0.6)	4 (1.0)	3 (1.2)	0.595	0.509	0.468
Acute renal failure (n)	0 (0)	2 (0.2)	2 (0.5)	0 (0)	0.791	0.642	-
Contrast allergy-related shock (n)	0 (0)	1 (0.08)	0 (0)	0 (0)	0.851	-	-

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Feasibility and safety of 8F Radial approach for chronic total occlusion interventions : Insight of RECHARGE european registry

# Feasibility of TRA for CTO PCI?

**RECHARGE**

*Tableau 4: Hybrid crossing techniques applied, classified according to procedural outcome.*

	8Fr R (n=44)	Overall (n=1253)	8Fr R/F (n=408)	8Fr F (n=253)	P (8Fr R- Overall)	P (8Fr R- R/F)	P (8Fr R- F)
Successful cases	33 (75%)	1075 (86%)	365 (90%)	200 (79%)	<b>0.046</b>	<b>0.005</b>	0.546
AWE applied (%)*	40 (91%)	80%	275 (67%)	185 (73%)	0.065	<b>0.001</b>	<b>0.011</b>
ADR applied (%)*	16 (36%)	23%	124 (30%)	74 (29%)	<b>0.045</b>	0.416	0.343
Retrograde technique applied (%)*	10 (23%)	34%	203 (50%)	99 (39%)	0.132	<b>0.001</b>	<b>0.037</b>
Number of approaches (n) <sup>‡</sup>	1.6 ± 0.7	1.5 ± 0.7	1.6 ± 0.8	1.5 ± 0.7	0.095	0.754	0.260
Number of approach changes (n) <sup>‡</sup>	0.6 ± 0.7	0.5 ± 0.7	0.6 ± 0.8	0.5 ± 0.7	0.095	0.754	0.260
<i>Primary strategy applied</i>							
AWE applied (%)	37 (84%)	77%	261 (64%)	178 (70%)			
ADR applied (%)	3 (7%)	7%	44 (11%)	22 (9%)			
Retrograde technique applied (%)	4 (9%)	17%	103 (25%)	53 (21%)			
<i>Primary strategy success</i>							
Overall initial success (%)	18 (41%)	60%	220 (54%)	129 (51%)			
AWE success (%)	15 (41%)	62%	133 (51%)	91 (51%)			
ADR success (%)	3 (100%)	67%	29 (66%)	14 (64%)			
Retrograde success (%)	0 (0%)	50%	58 (56%)	24 (45%)			
<i>Final successful crossing technique<sup>‡</sup></i>							
AWE (%) <sup>‡</sup>	17 (52%)	58%	143 (39%)	99 (50%)			
ADR (%) <sup>‡</sup>	13 (39%)	18%	82 (22%)	48 (24%)			
Retrograde (%) <sup>‡</sup>	3 (9%)	24%	140 (38%)	53 (27%)			

\* Technique applied at any stage during the procedure, either as a primary or a bail-out strategy.

<sup>‡</sup> Expressed as mean ± SD.

<sup>‡</sup> Final technique applied, which led to a successful outcome.

AWE, antegrade wire escalation; ADR, antegrade dissection & re-entry.

J. Wintzer-Wehekind; B. Faurie

Feasibility and safety of 8Fr Radial approach for chronic total occlusion interventions : Insight of RECHARGE european registry

# Feasibility of TRA for CTO PCI?



*Tableau 5: Outcomes of the antegrade dissection & re-entry and retrograde techniques.*

Antegrade dissection & re-entry	8Fr R (n=44)	Overall (n=1253)	8Fr R/F (n=408)	8Fr F (n=253)
ADR technique applied (n)	16	292	124	74
ADR successful (n (%))	13 (81%)	192 (66%)	82 (66%)	48 (65%)
Final success (n (%))	13 (81%)	229 (78%)	102 (82%)	57 (77%)

*Tableau 6: Success rate 8F Radial vs Overall, according to J-CTO score.*

	Overall (n=1253)	8Fr R (n=44)	Easy		Intermediate		Difficult		Very Difficult	
			Overall (116)	R (0)	Overall (249)	R (1)	Overall (385)	R (7)	Overall (503)	R (36)
Inclusions	1253	44								
Success rate (n (%))	1075 (86%)	33 (75%)	115 (99%)	-	237 (95%)	1 (100%)	335 (87%)	5 (71%)	388 (77%)	27 (75%)
p-value	<u>0.046</u>		-		0.822		0.228		<u>0.769</u>	

J. Wintzer-Wehekind; B. Faurie

Feasibility and safety of 8F Radial approach for chronic total occlusion interventions : Insight of RECHARGE european registry

# Complex lesions via Radial approach : Where are the limits?

- In my opinion
- **The more fragile the patients are, the more they benefit from TRA**
- You can do everything through TRA with same **Efficacy** than TFA
- ...and better **Safety**
- ...if you use **large bore catheters (7&8F)**
- ..if you preserve radial artery **patency!**
- So **sheathless systems** seems to be a « Must Have technology » to push TRA PCI envelope !

# Complex lesions via Radial approach : Where are the limits?

**Benjamin Faurie, MD**

**Cardiovascular Institute  
Hospitalier Mutualiste de Grenoble  
FRANCE**

