

Hello!

I am **Guo-Shiang Tseng, MD**

Disclosure Statement:

I DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of this presentation.



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the Devil is in the Detail

of

Coronary CTO

Recanalization



Complex PCI
2018
Case Interflow





The Nightmare



CTO PCI

- ✓ **technically complex**
- ✓ high likelihood of **failure** and acute **complications** maybe one of the **nightmare** experiences in the cardiac Cath lab.



Case Briefing

◆ *Mrs. Lee, 57 Y/O female*

PCI history:

1. Acute MI s/p PPCI
2 months ago



Risk factors:

1. Hypertension
2. Hyperlipidemia





1st Cardiac Catheterization

*2 month
ago*



1st Cardiac Catheterization

2 month
ago

- LM: Patent
- LCx: **Total occlusion**



m-LCx

EES : 2.5 x 36 mm



1st Cardiac Catheterization

2 month ago

- LAD: **CTO of the M/3** (collaterals from conal branch)
- RCA: Luminal irregularity
- ✓ Conus: **Type D** origin with type 3 distribution

RAO-CRA

LAO-CRA

Antegrade approach failed

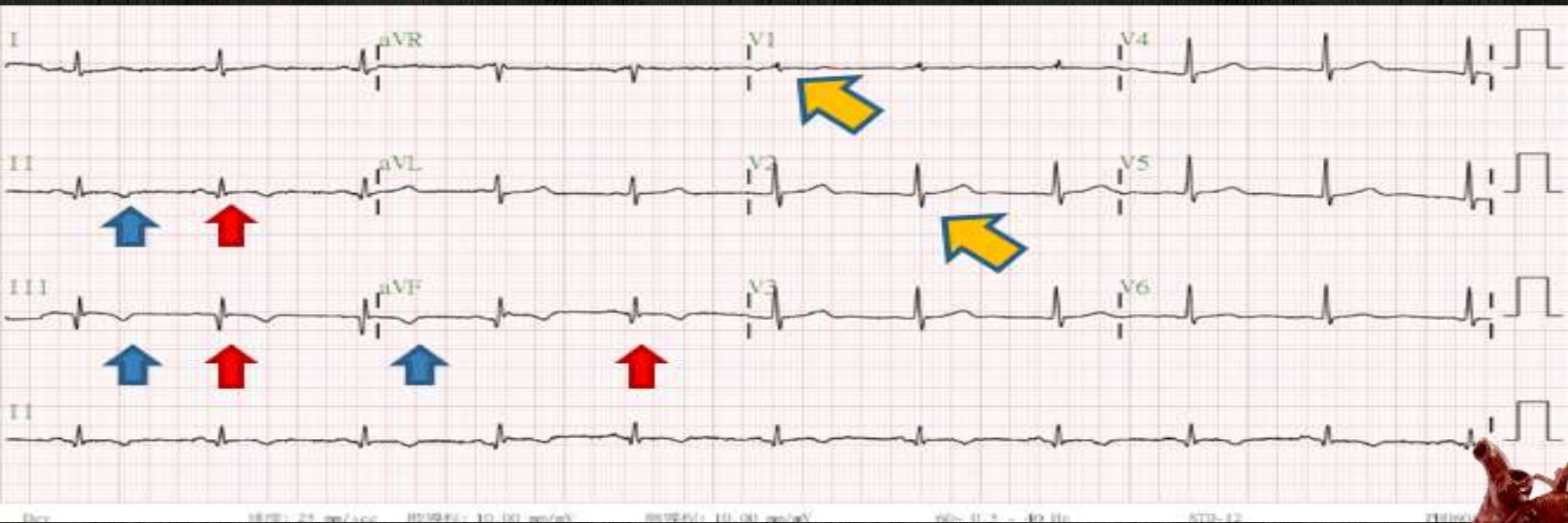
Nowadays



After primary PCI



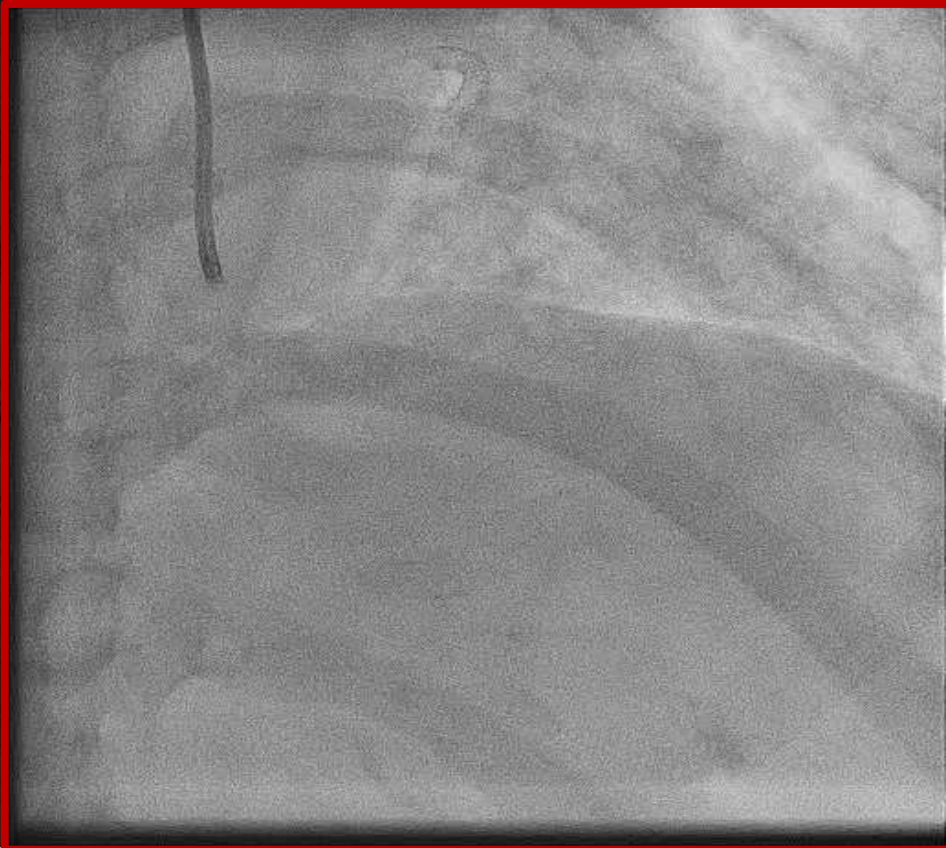
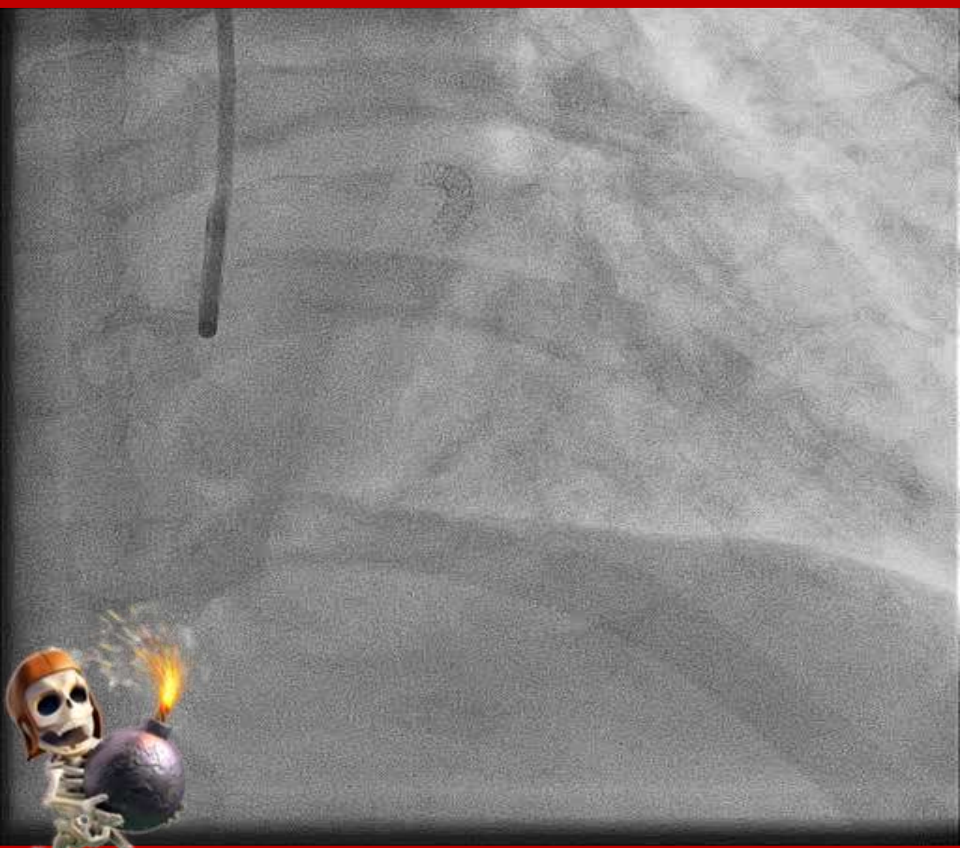
◆ Intermittent **effort chest discomfort** for 3 weeks

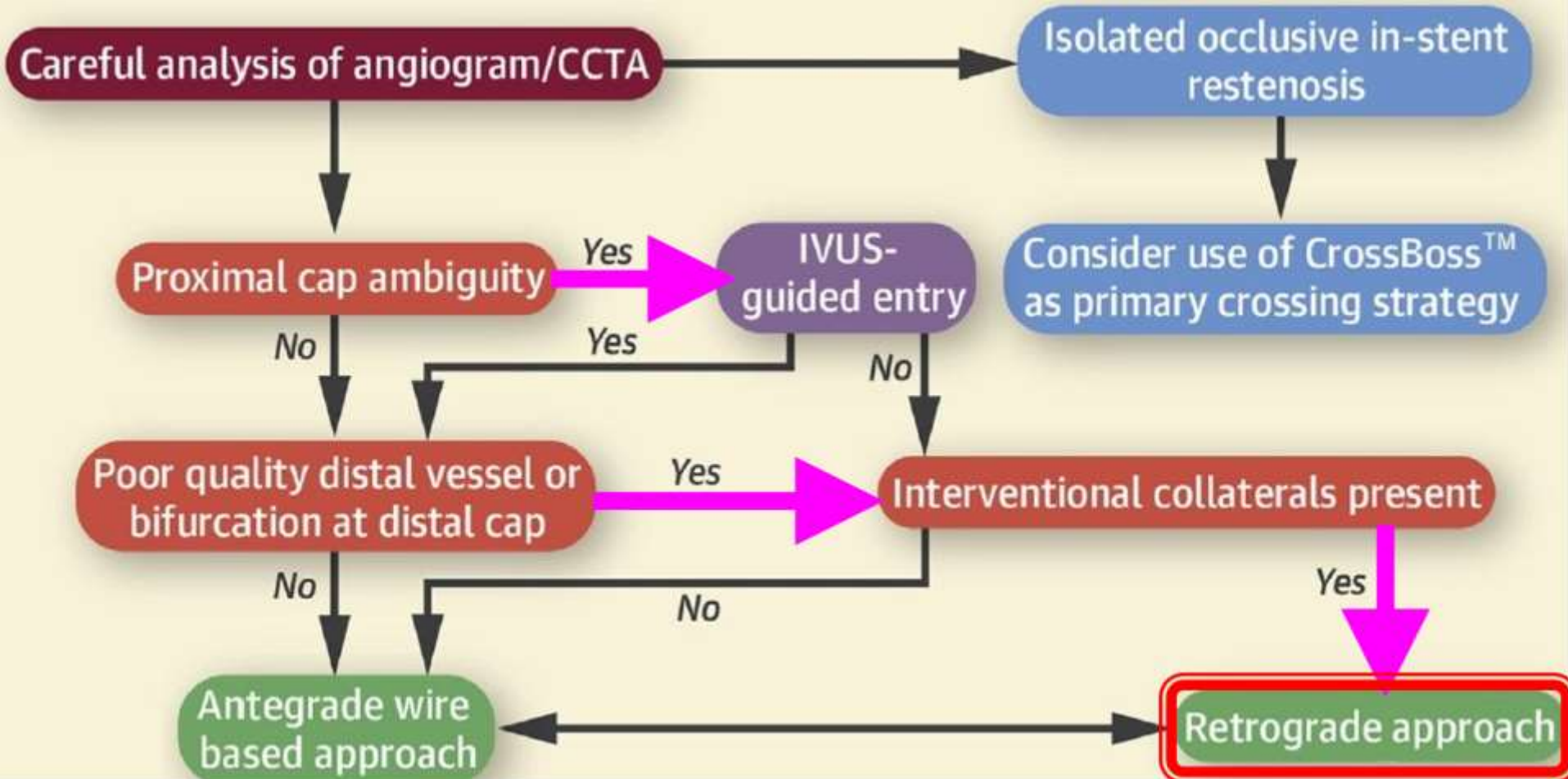


Baseline Coronary Angiography

◆ LCx :
No ISR

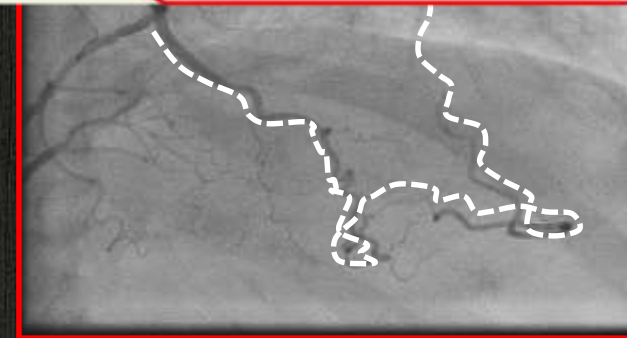
◆ LAD :
CTO of the M/3





➤ Strategic Plan

- ◆ Retrograde wire escalation
- ◆ Antegrade wire escalation
- ◆ Retrograde dissection/re-entry
- ◆ Antegrade dissection/re-entry



Interventional Management

SAL-1 SH (RCA)

R't radial a.

6.0Fr---100cm

EBU 3.5 (LMCA)

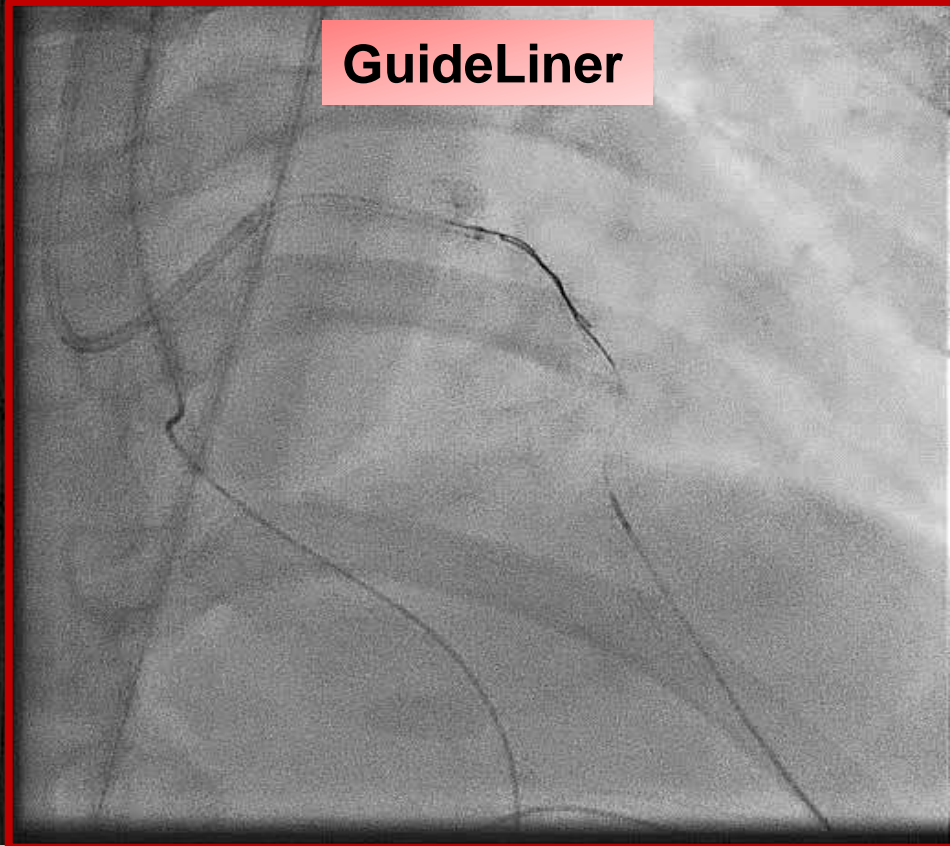
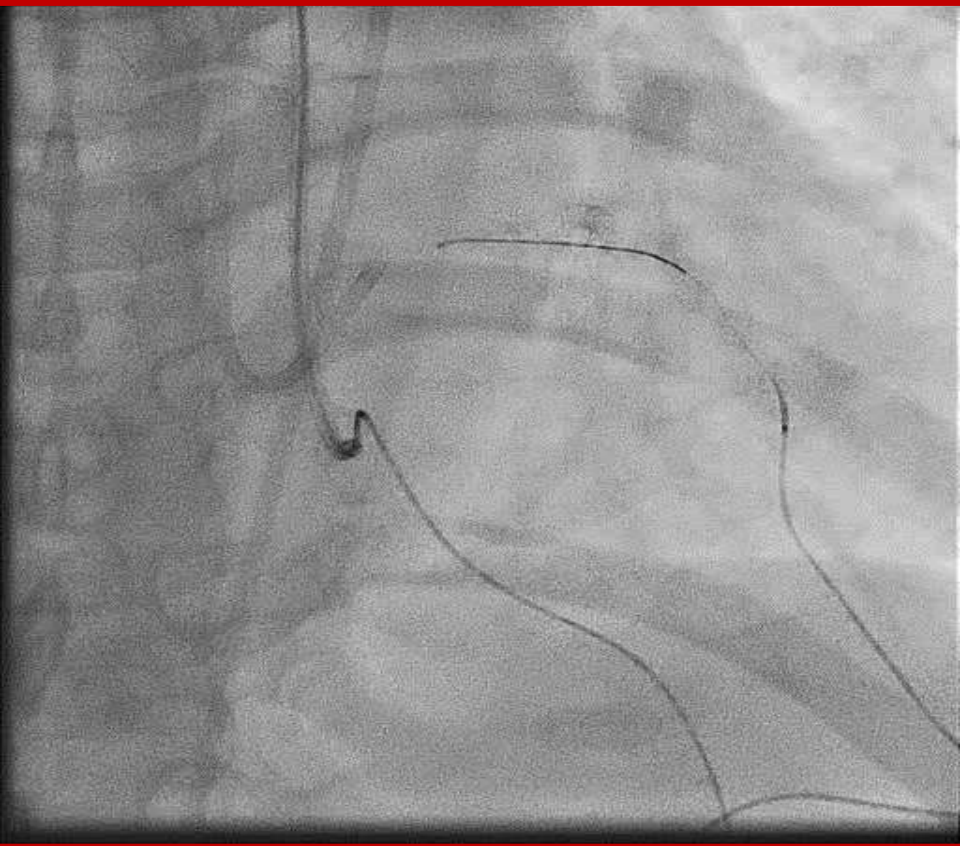
R't femoral a.

6.0Fr---100cm

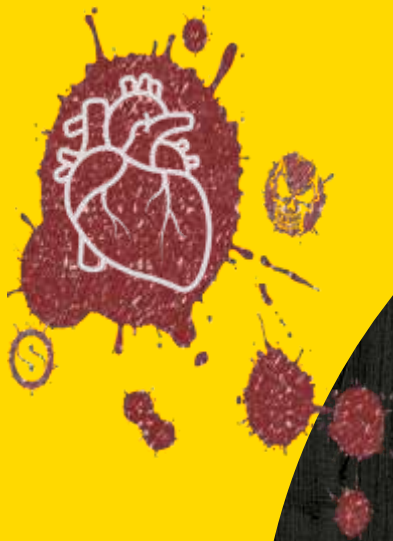
SION wire

Corsair MC

150cm



GuideLiner



What Next



Interventional Management

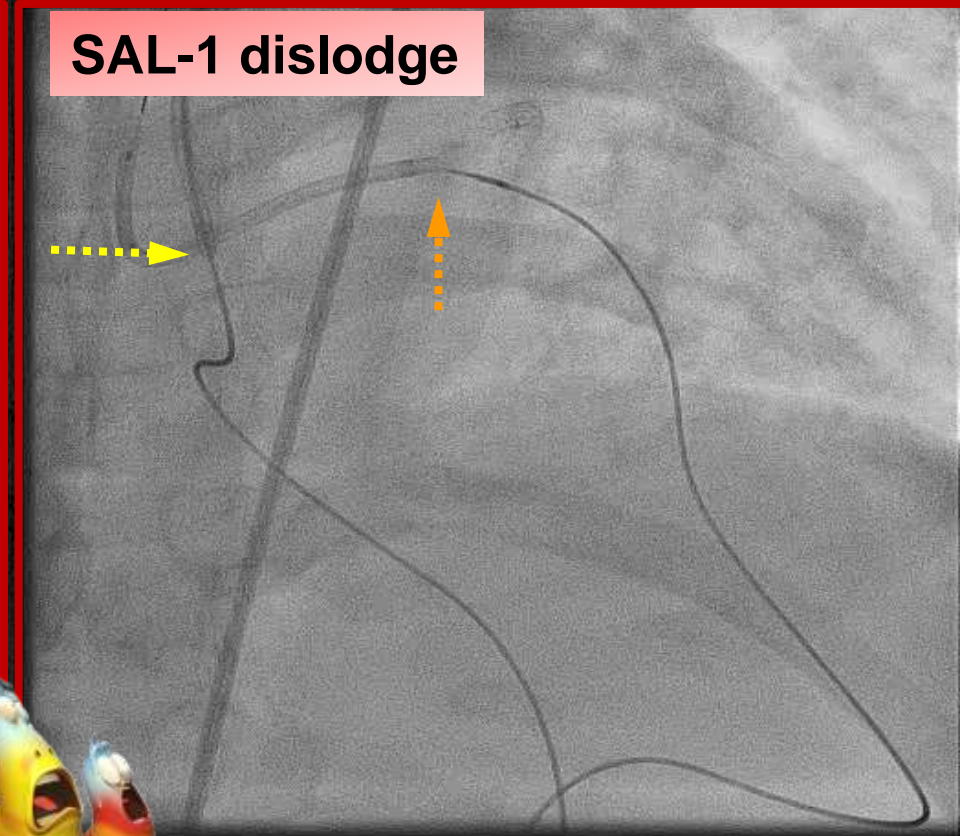
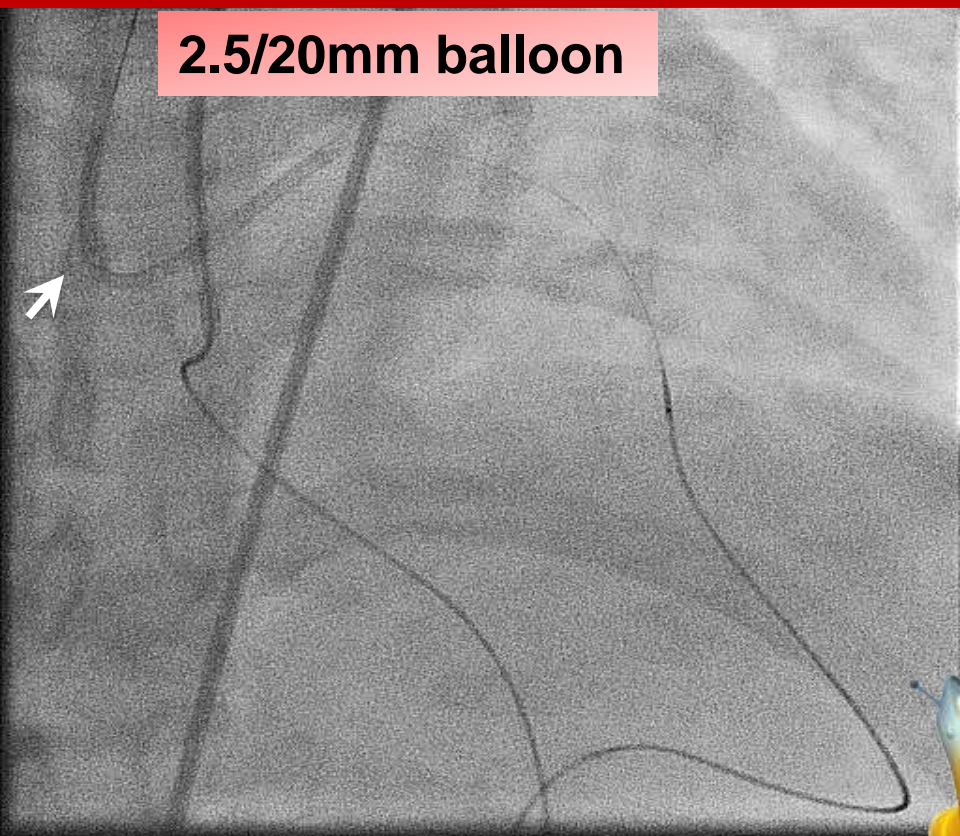
Balloon anchor

**EBU
deep seated**

**MC
crossed CTO**

2.5/20mm balloon

SAL-1 dislodge



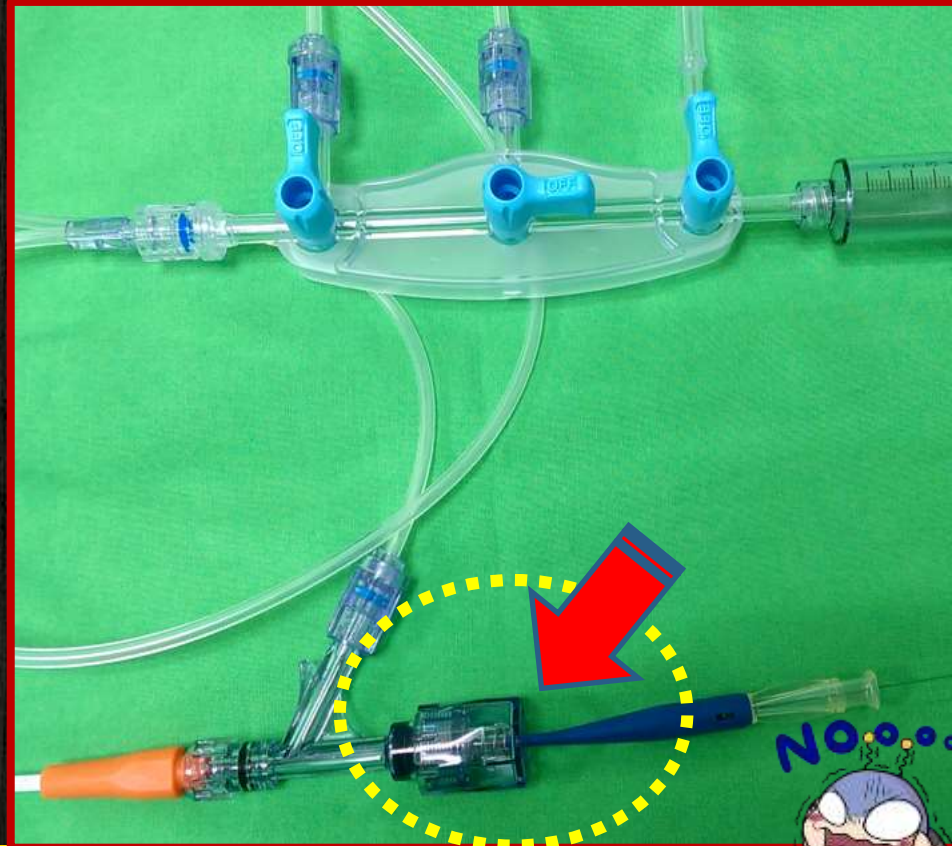
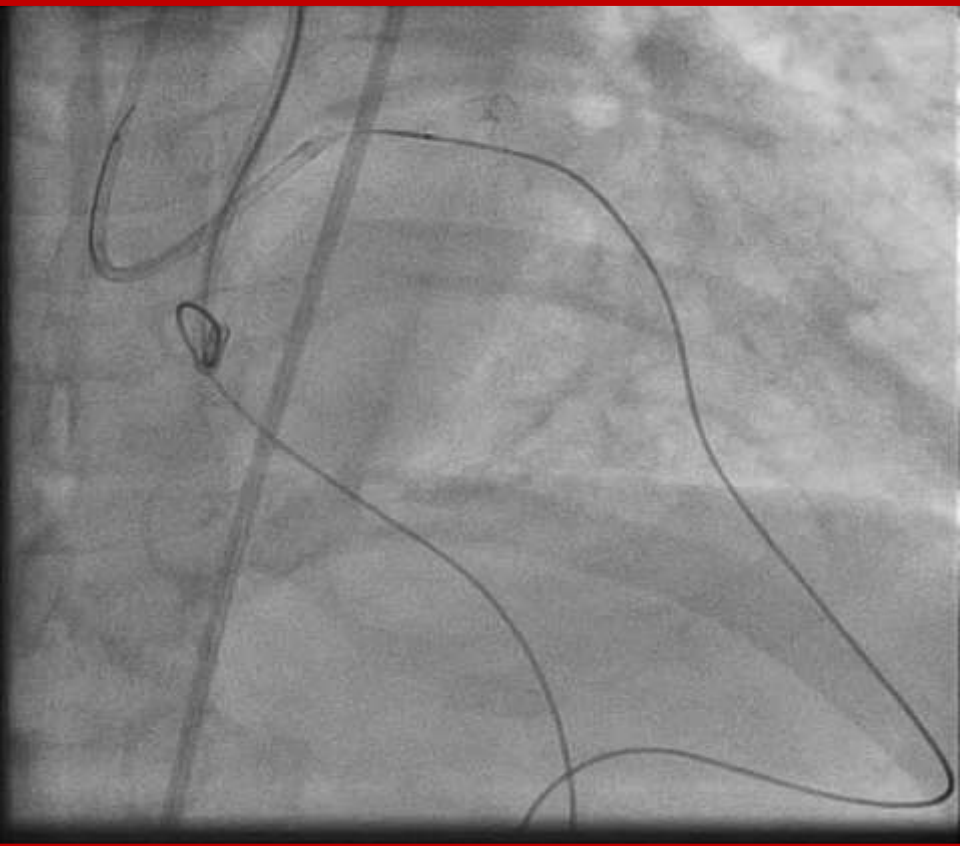
Interventional Management

SAL-1 deep seating

Corsair MC failed to advance into EBU

GuideLiner

RG 3 wire

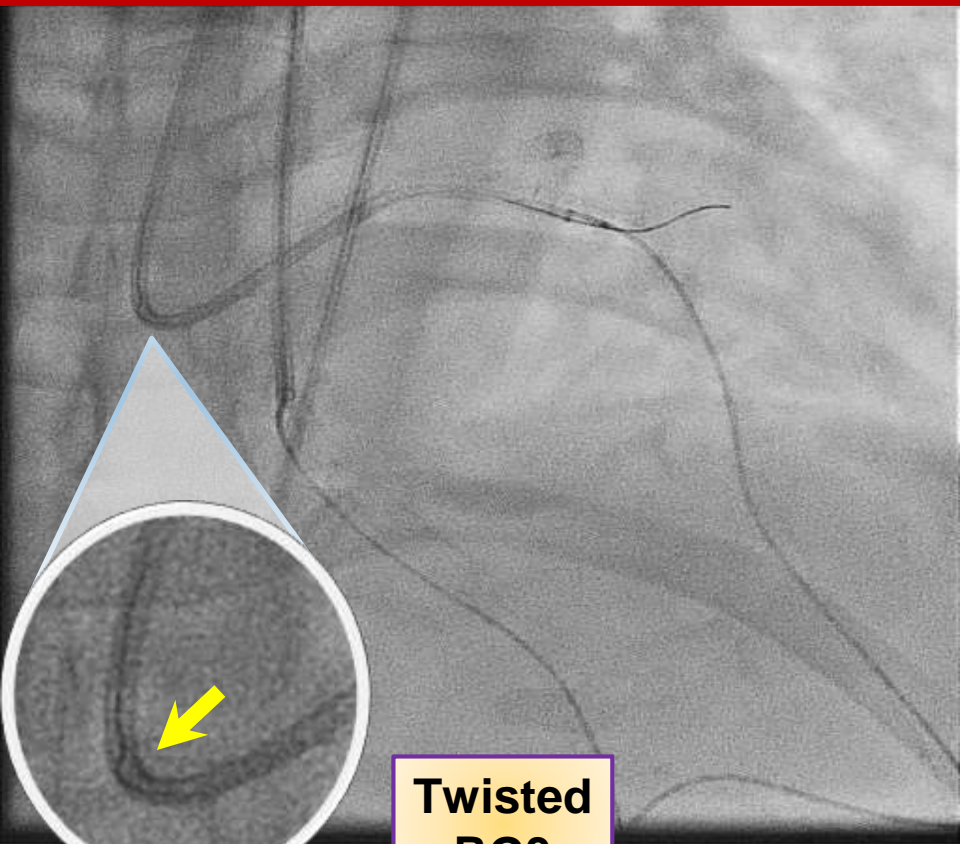


Interventional Management

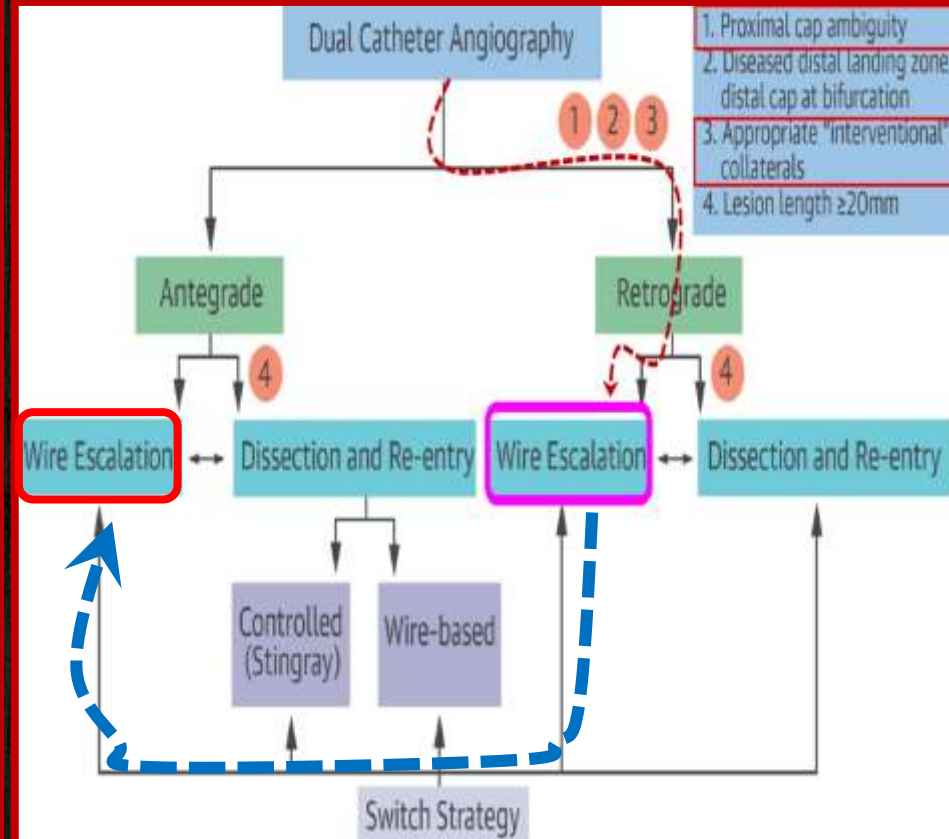
Guide catheter extension system

RG 3 failed to externalization

Antegrade wiring



Twisted RG3

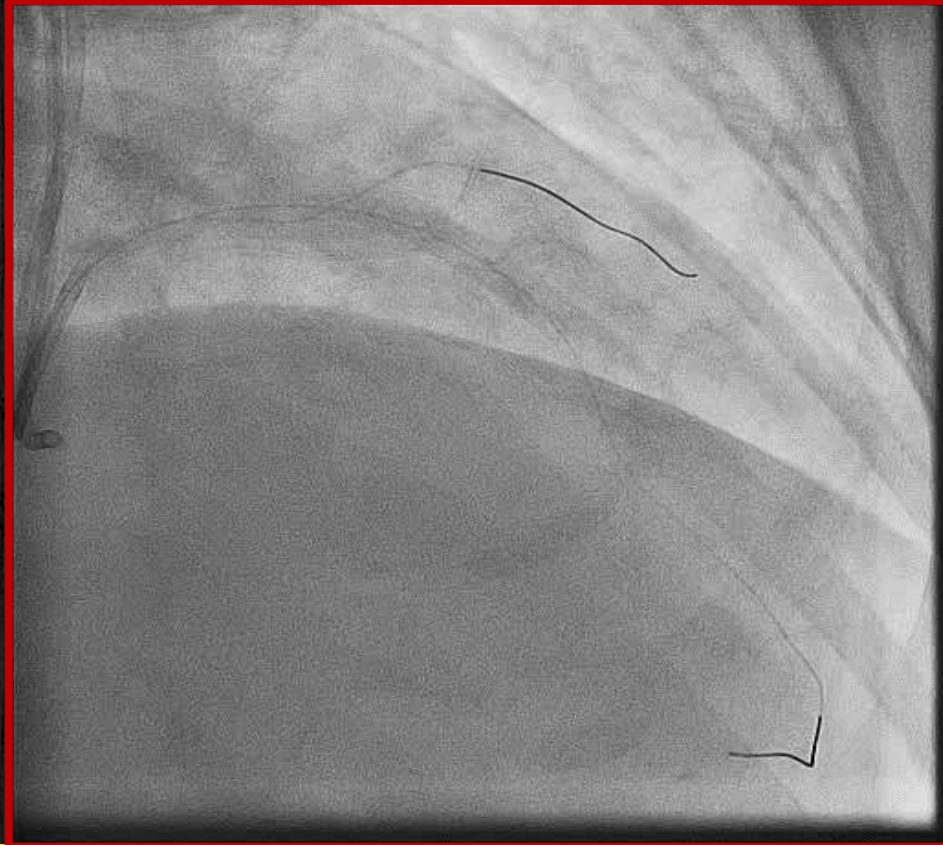
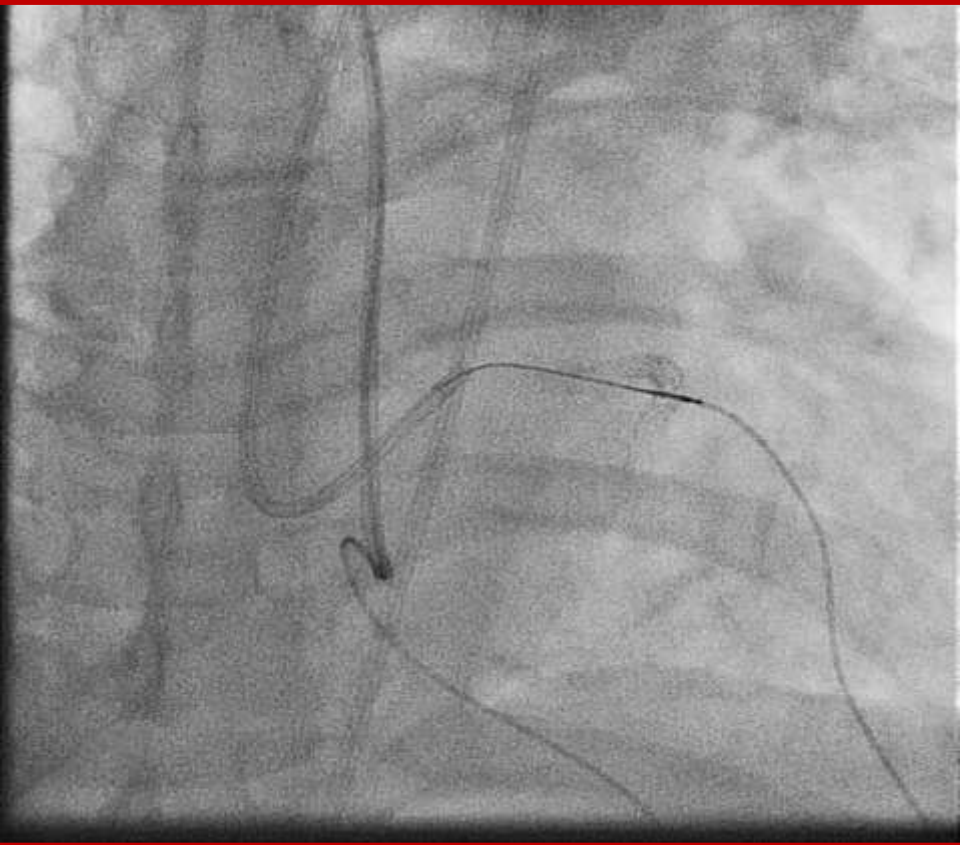


Interventional Management

**Modified
Rendezvous**

Pre-dilations

DES



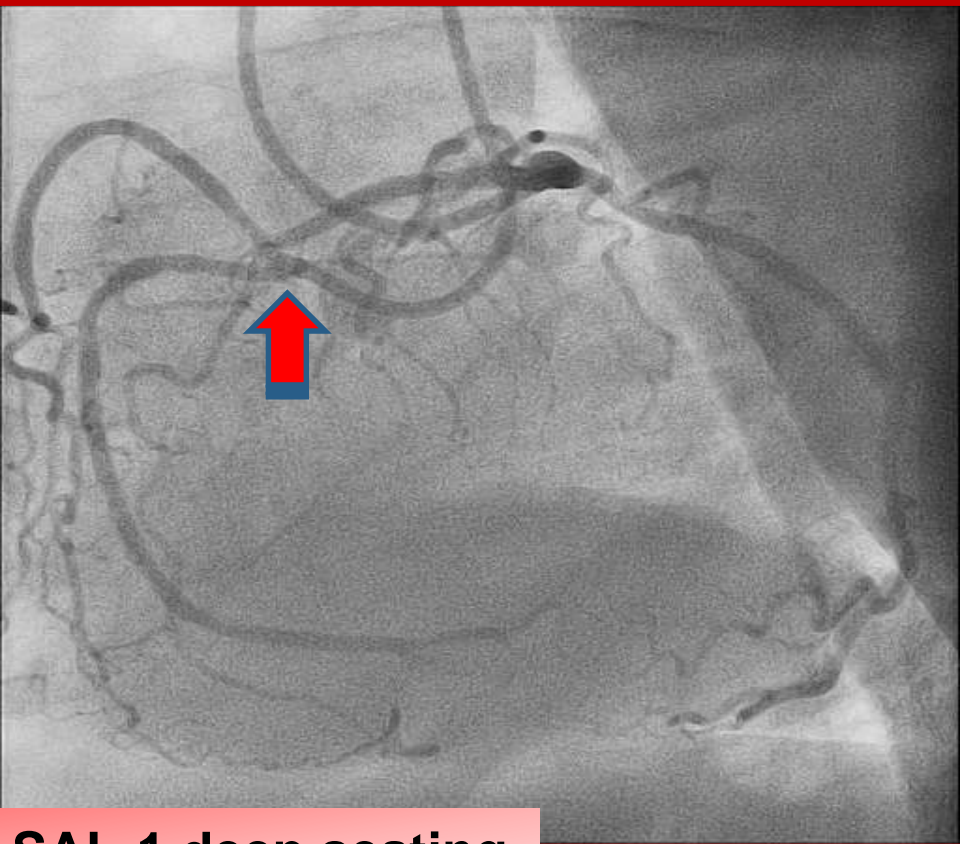


Dual Catheter Angiography

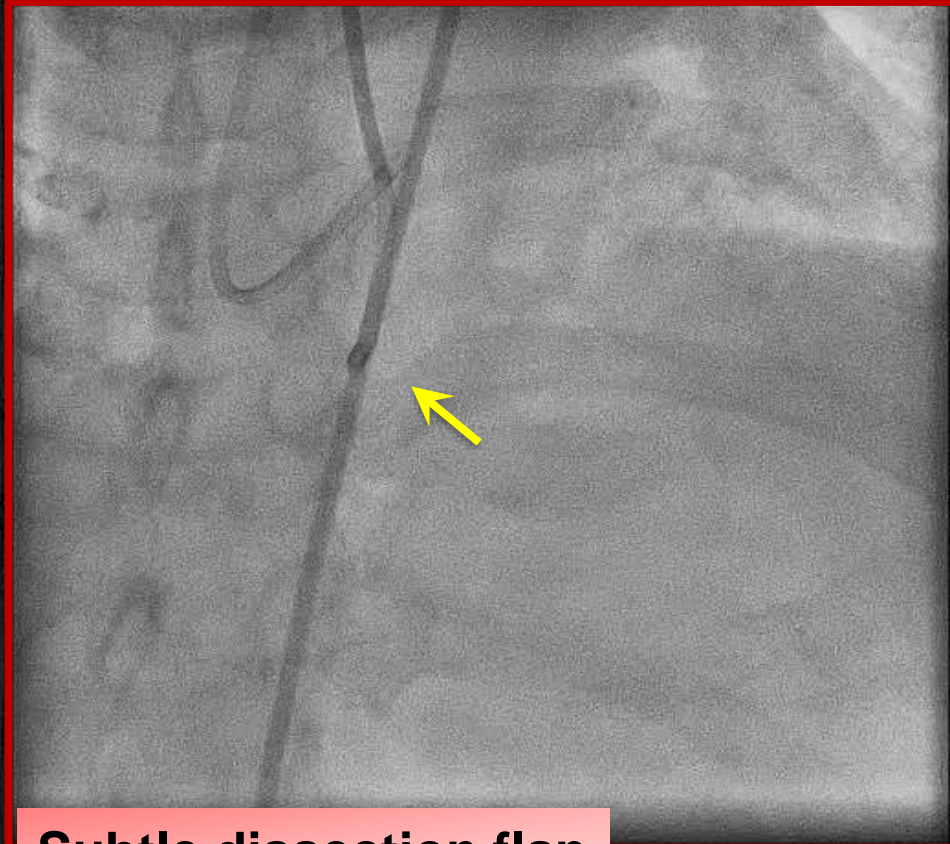
SAL-1 deep seating

os-RCA
Dissection

TIMI 3
distal runoff



SAL-1 deep seating



Subtle dissection flap

Interventional Management

Type D dissection

TIMI 2 distal runoff

JR 3.5
(6.0Fr) SH

SAL-1

JR

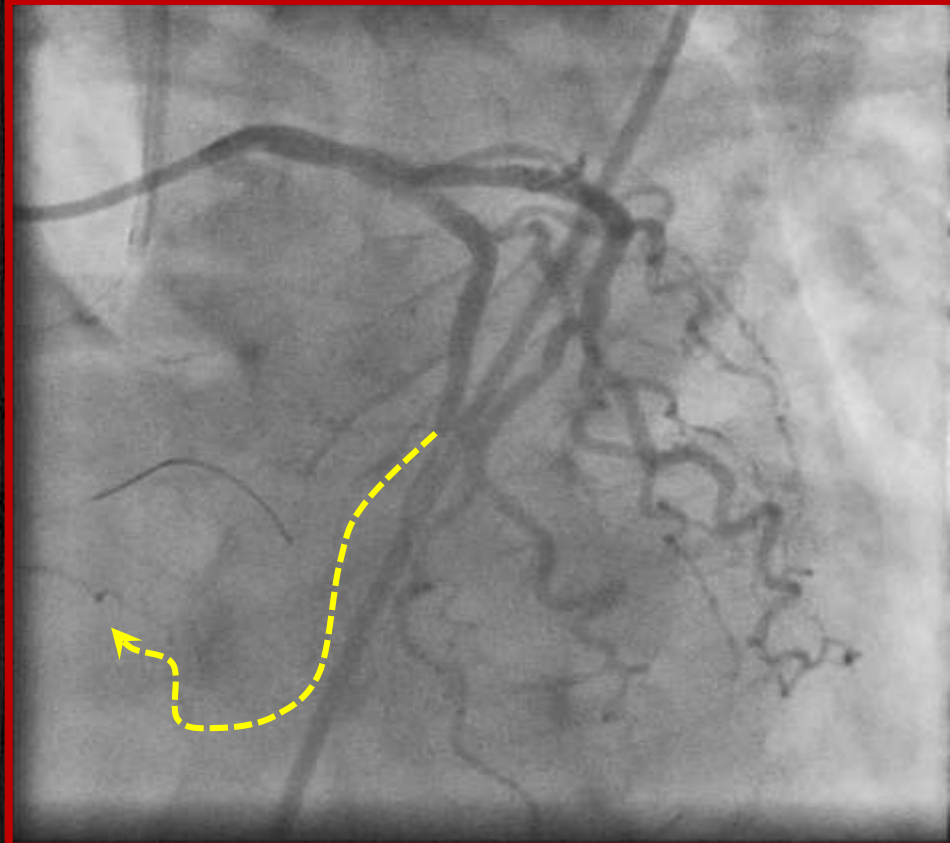
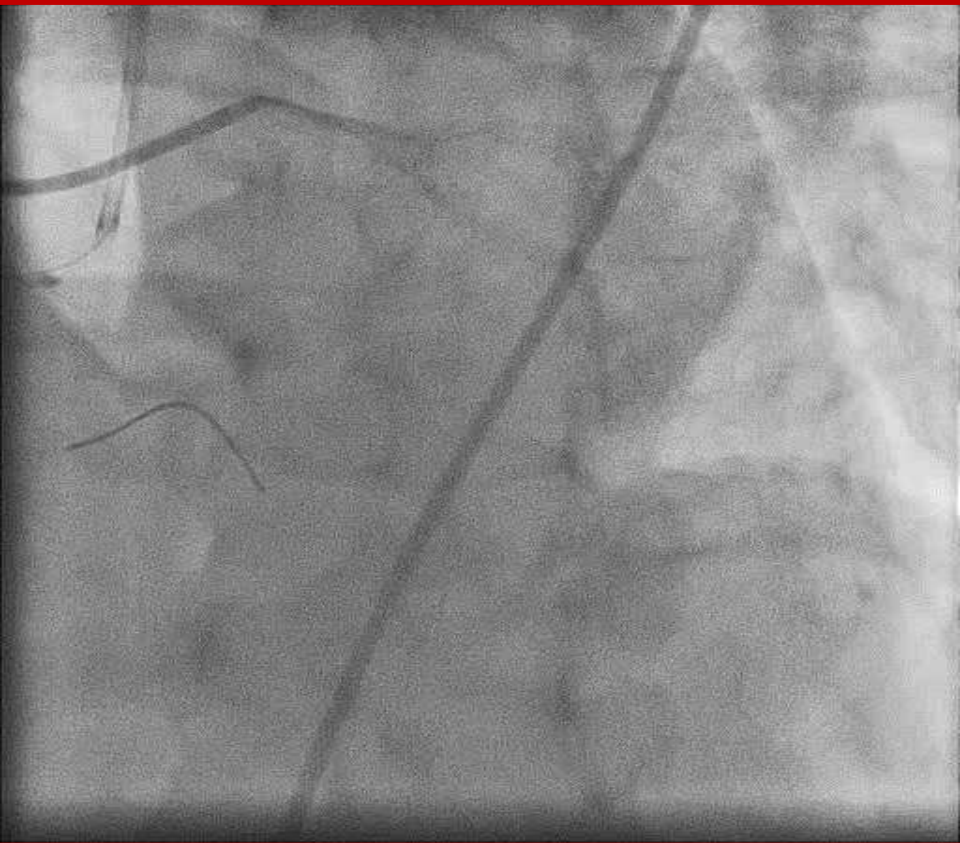


Interventional Management

Chest tightness
Nausea/Vomiting

Hemodynamics
stable

Faint
collaterals
from LAD

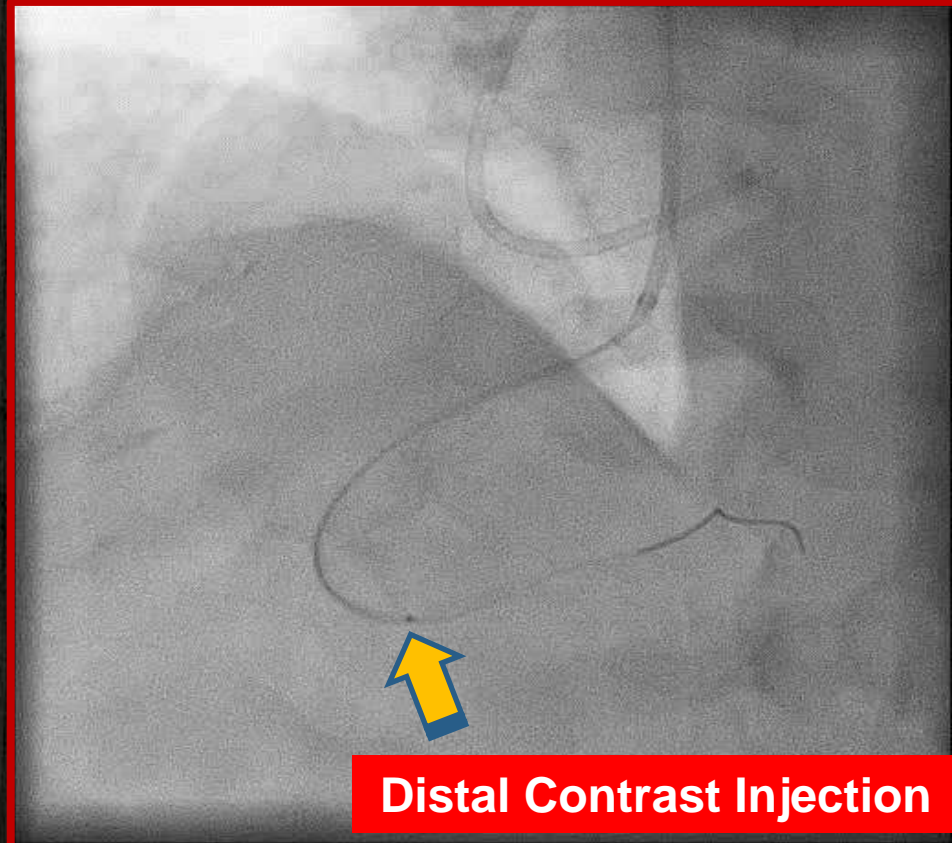


Interventional Management

2.5/20mm
Balloon

NTG
200 mcg i.c

**Distal contrast
injection**
(Thrombuster II)



Distal Contrast Injection

Attention
to



DETAIL

m-RCA

p-RCA

IVUS

IMH

IMH

T



052 PM

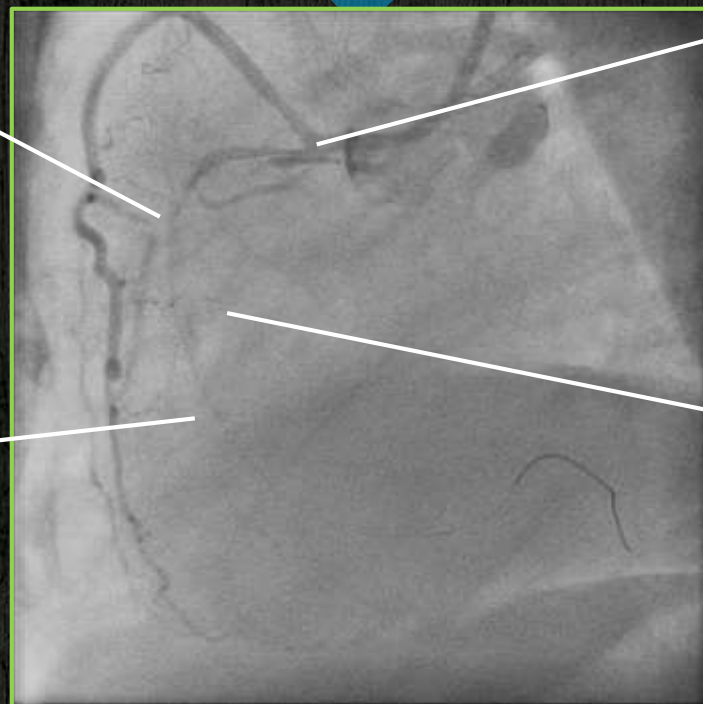
d-RCA

052 PM

m-RCA

T

F



d-RCA

p-RCA

IMH



WTF?



IS THIS STATUS

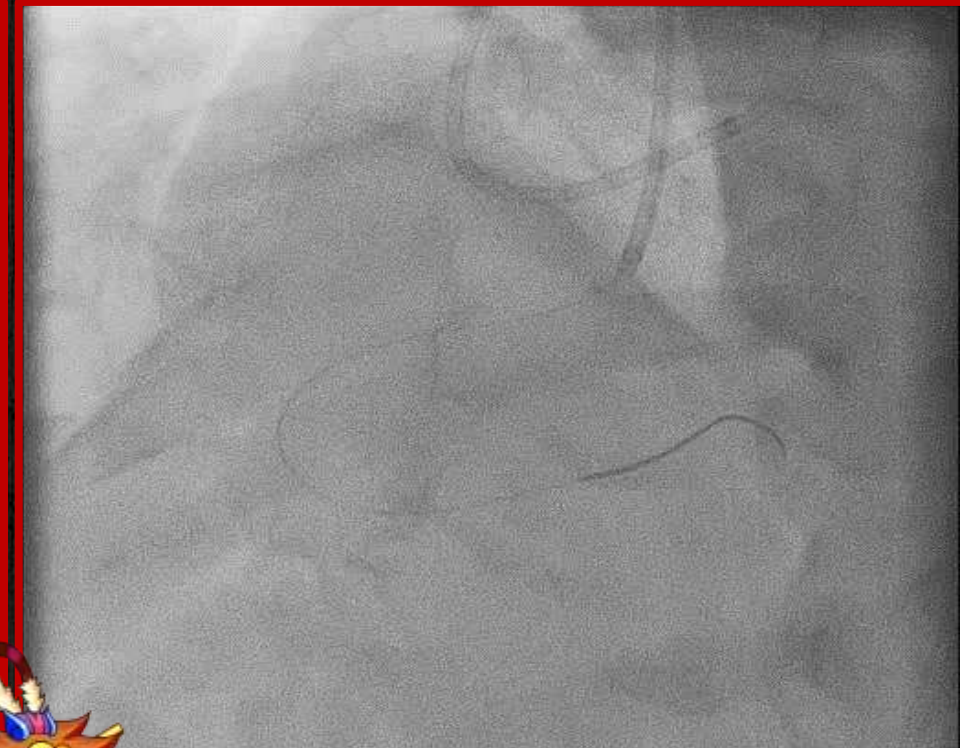
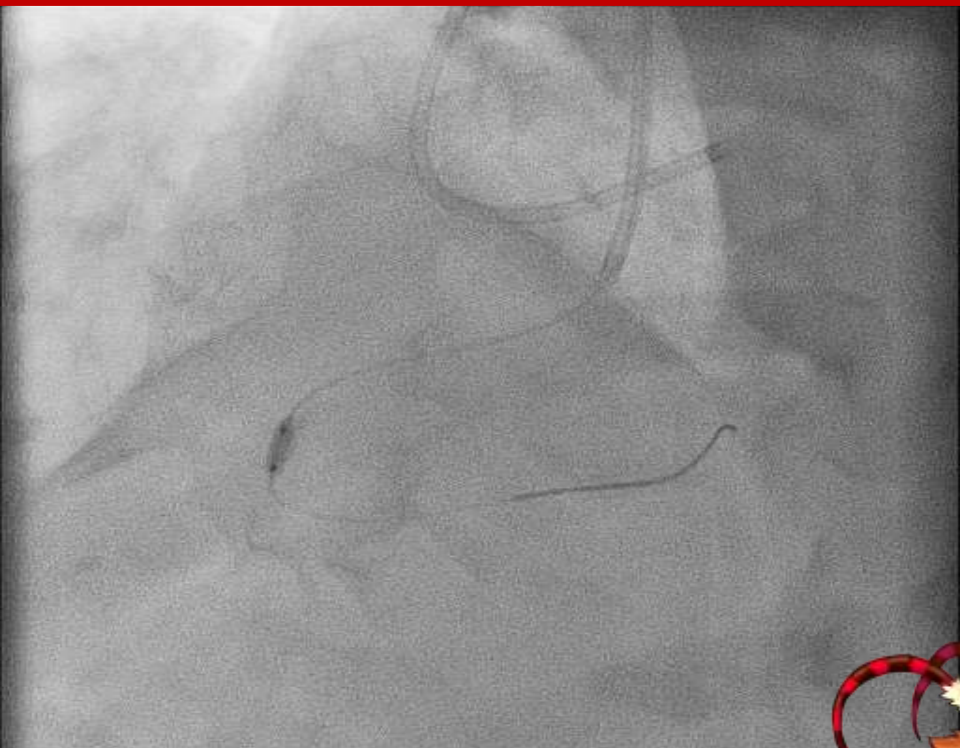


Interventional Management

**Cutting Balloon
Fenestration**

**Restored
TIMI-3 flow**

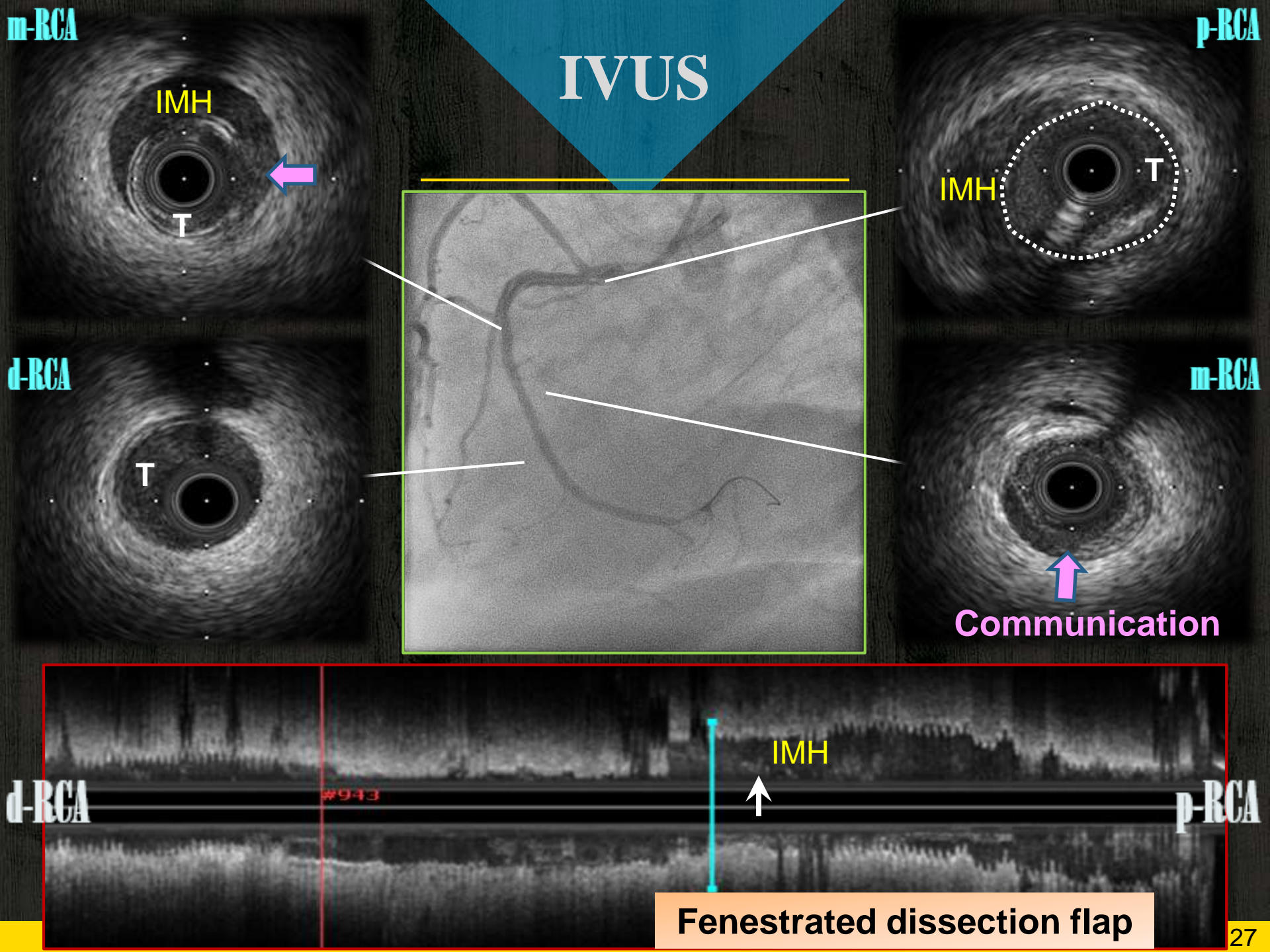
IVUS



**2.5/10mm Cutting balloon
(From m-RCA to p-RCA)**



TIMI 3 distal runoff

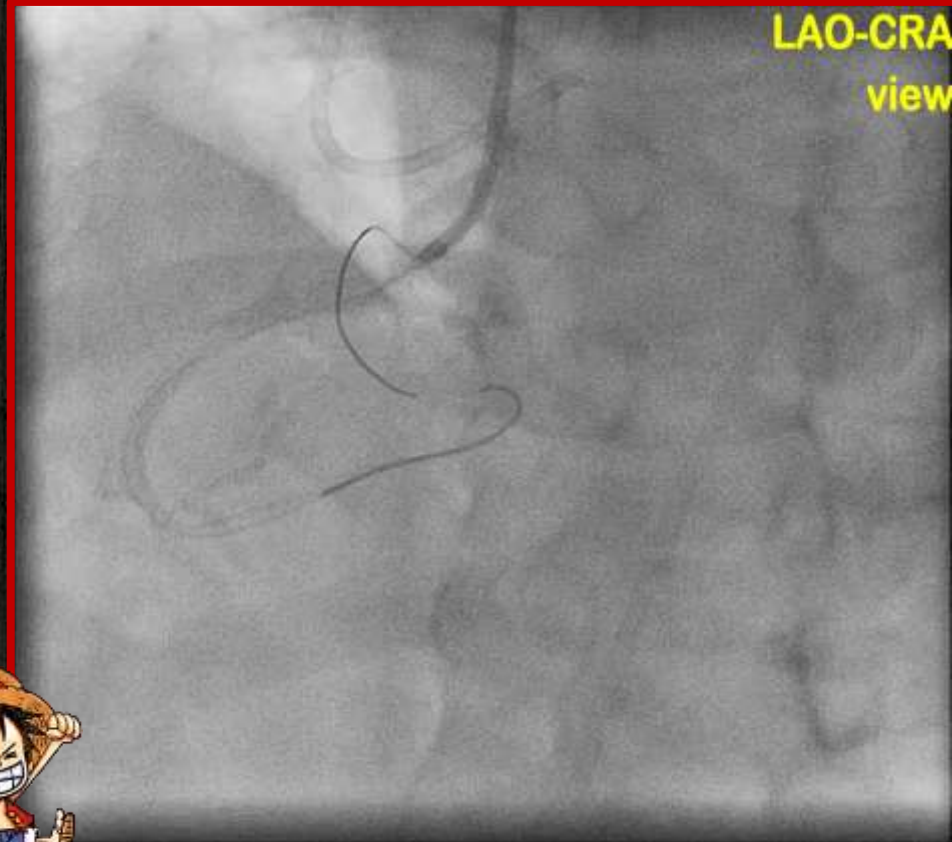
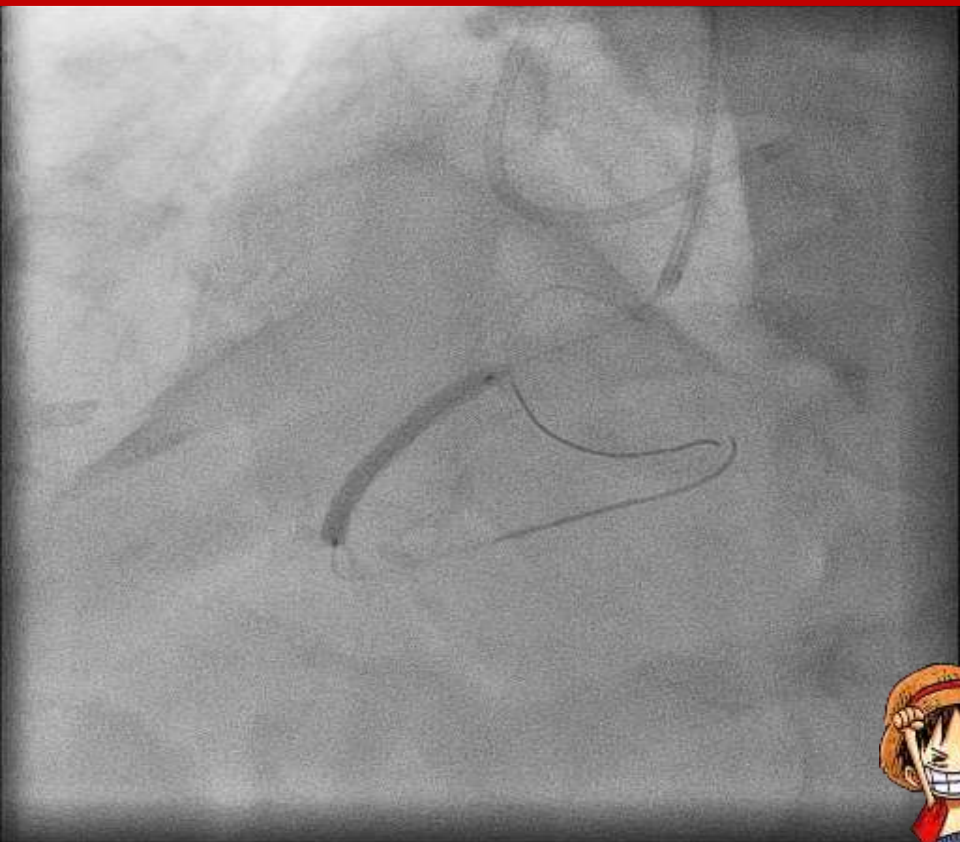


Interventional Management

DES
implantation

Serial
post-dilations

Final





**MISSION
ACCOMPLISHED**



Etiology

- **Small caliber** coronary artery
- Inappropriate **guiding catheter** manipulation
- **Vigorous** contrast injection



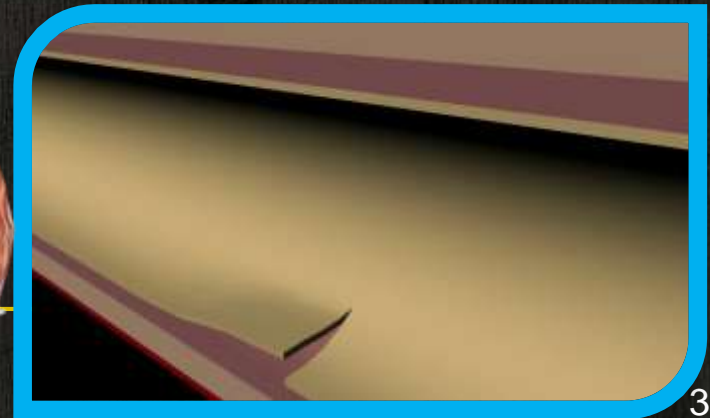
You may have
won the BATTLE,
but you
lost the WAR!



Take Home Message



- Thorough pre-procedural planning (GC selection...)
- Donor vessel injury
- **IVUS-guided fenestration** with cutting balloon angioplasty





Thank You!



Any questions?

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