

Alhyatt intervention cardiology team

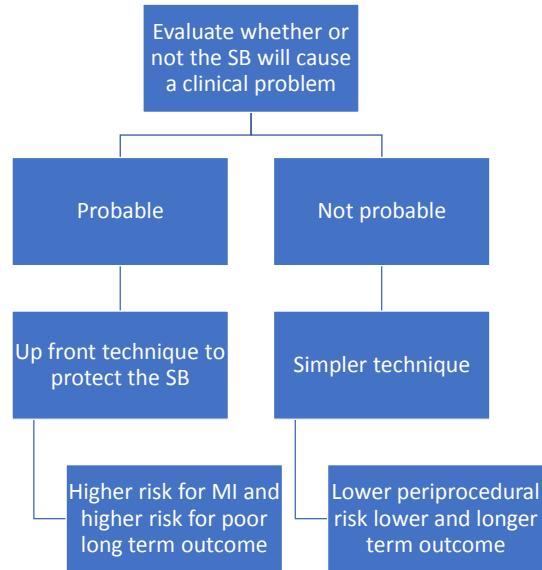
# Treating bifurcation lesions, Step by step.

## Definition

---

- Lesion occurring at or adjacent to a significant division of a major epicardial vessel.
- 15-20%
- SB:
  - A branch that the operator dose not want to lose.
  - Evaluate in the global context.

## Dilemma of bifurcation treatment



## Anatomy

---

- Murry's law and Fient's law
- Complex structure with three segments
  - Identify MB and SB >>> flexibility
  - Diameters and angle

# Recommendation

## KISSSS

### Provisional stent strategy

1

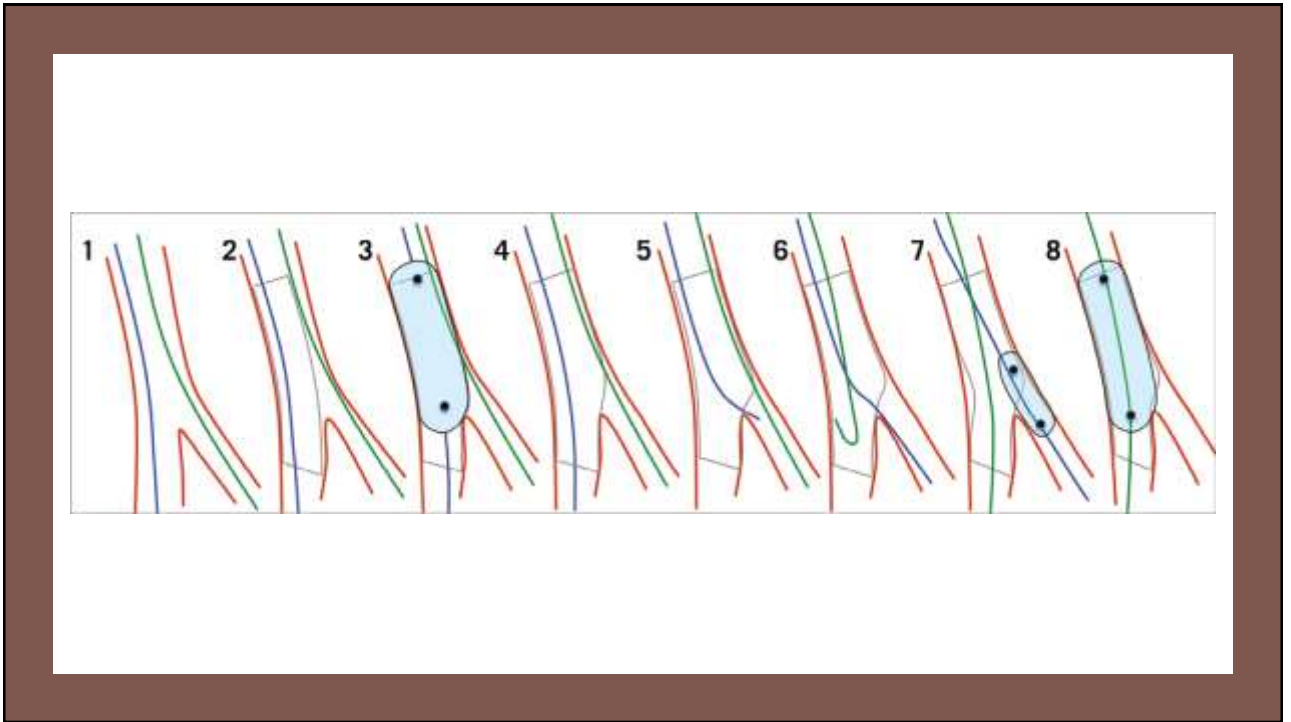
Should be considered as the standard approach for CBL.

2

Identify the MB.

3

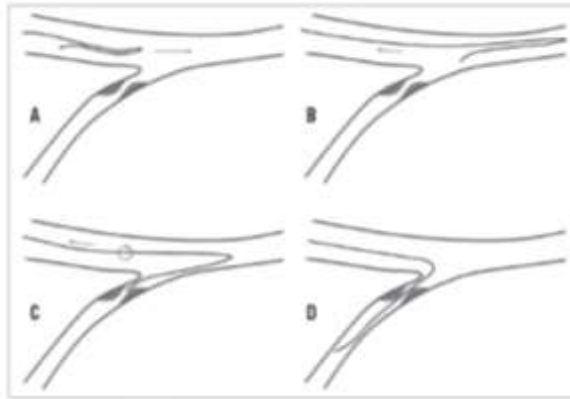
Ensure optimal result in the MV is more important.



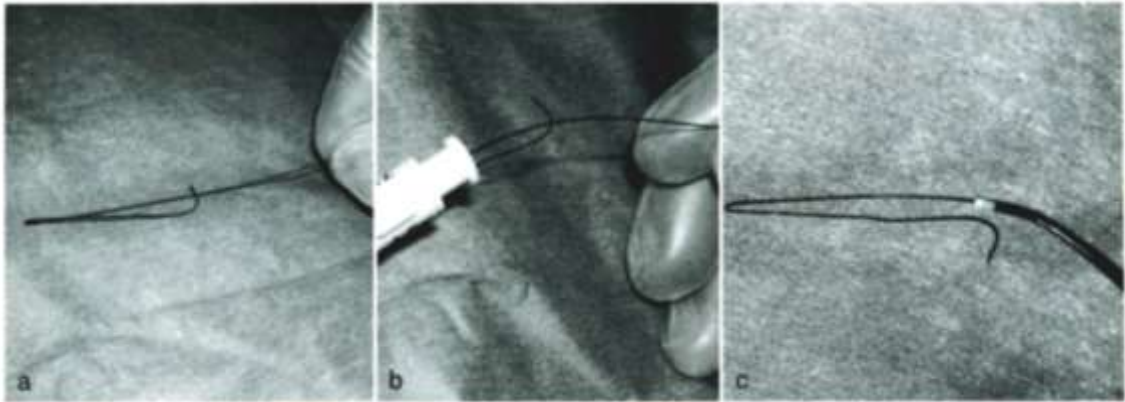
## Initial steps

---

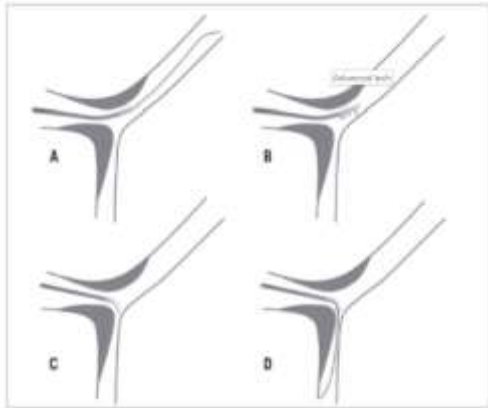
- Transradial
- 6 Fr
- Wire the SB
  - Consider specific guide wire
  - Difficult SB wiring??



Reversed wiring



Reversed wiring



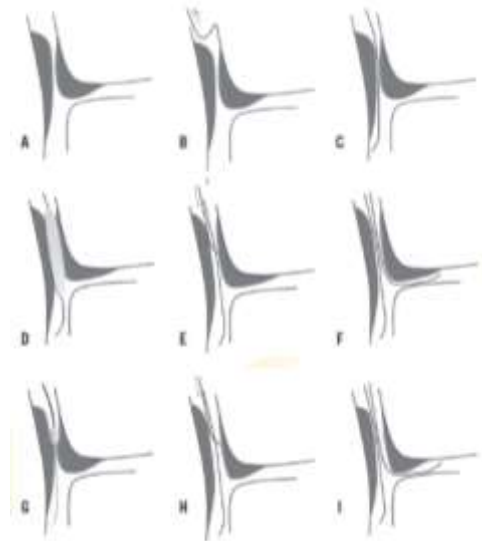
Advanced tech (Venture catheter)



Advanced tech (Double lumen catheter)

Latest resort

- MV predilation
- MV debulking



## Predilation and stenting

Routine MB  
predilation is  
considered

Avoid balloon  
oversizing

Ensure optimum  
balloon opening,  
if not consider  
debulking.

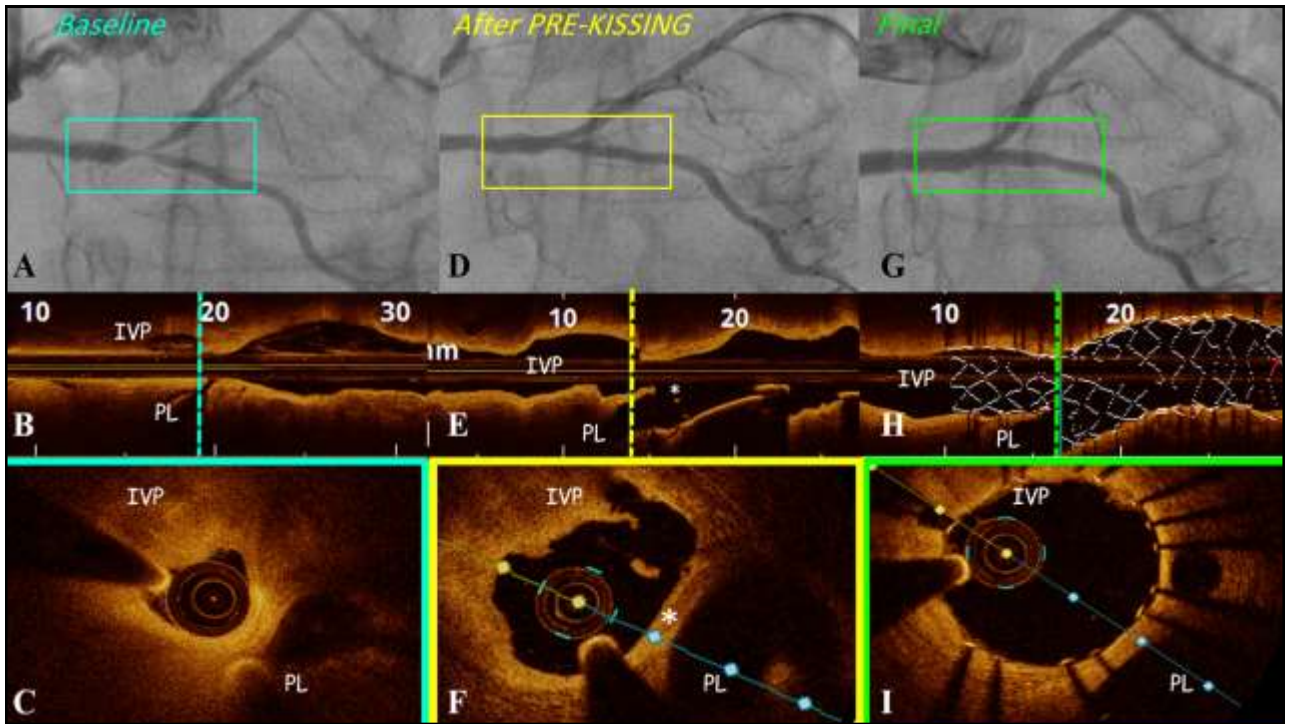
## Predilation and stenting

- SB predilation:
  - Advantages:
    - Increase ostial lumen
    - Facilitate rewiring
    - Facilitate post dilation
  - Disadvantages:
    - Risk of dissection

## Predilation and stenting


- SB predilation:
  - Factors favoring SB pre dilation:
    - Suboptimal flow after wiring
    - Extensive calcification
    - Extensive SB disease beyond ostium





## Stent type and size

- Permanent DES
- Size according to the distal MV 1:1
- Choose a platform that can expand to the reference diameter of the proximal MV.



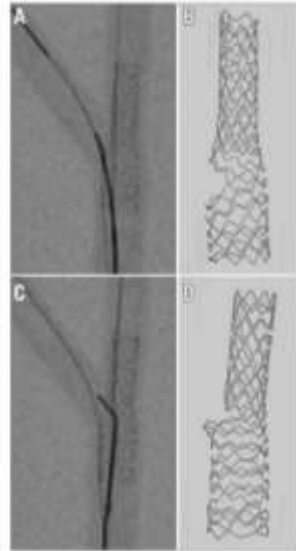
	Synergy	Xpedition	Res. Onyx	Ultimaster	BioMatrix A	Orsiro
2.25	Small vessel (6 crowns, 2-4 connectors)	Small vessel (6 crowns, 3 connectors)	Small vessel (6.5 crowns, 2 connectors)	Small vessel (6 crowns, 2 connectors)	Small vessel (6 crowns, 2 connectors)	Small vessel (6 crowns, 3 connectors)
2.50						
2.75			Medium vessel (8.5 crowns, 2 connectors)			
3.00	Workhorse (8 crowns, 2-4 connectors)					
3.50		Large vessel (9 crowns, 3 connectors)	Large vessel (9.5 crowns, 2.5 connectors)	Large vessel (8 crowns, 2 connectors)	Large vessel (9 crowns, 3 connectors)	Large vessel (6 crowns, 3 connectors)
4.00	Large vessel (10 crowns, 2-5 connectors)					
4.50			Extra-Large vessel (10.5 crowns, 2.5 connectors)	BMS		
5.00						

## POT (standard step)

- Short oversized balloon
- NC vs semi compliant
- Advantages:
  - Facilitate rewiring
  - Decrease risk of stent deformation
  - Reduce risk of abluminal rewiring

## SB rewiring

- Distal rewiring
- Pull back



## Difficult SB rewiring

Special  
wire

Re POT

## Kissing balloon

---

Isolated SB dilation may cause jailing of the MV so it is not advisable

---

Routine kiss lack evidence 😊

---

Necessary if SB compromised

## Kiss is not always the same

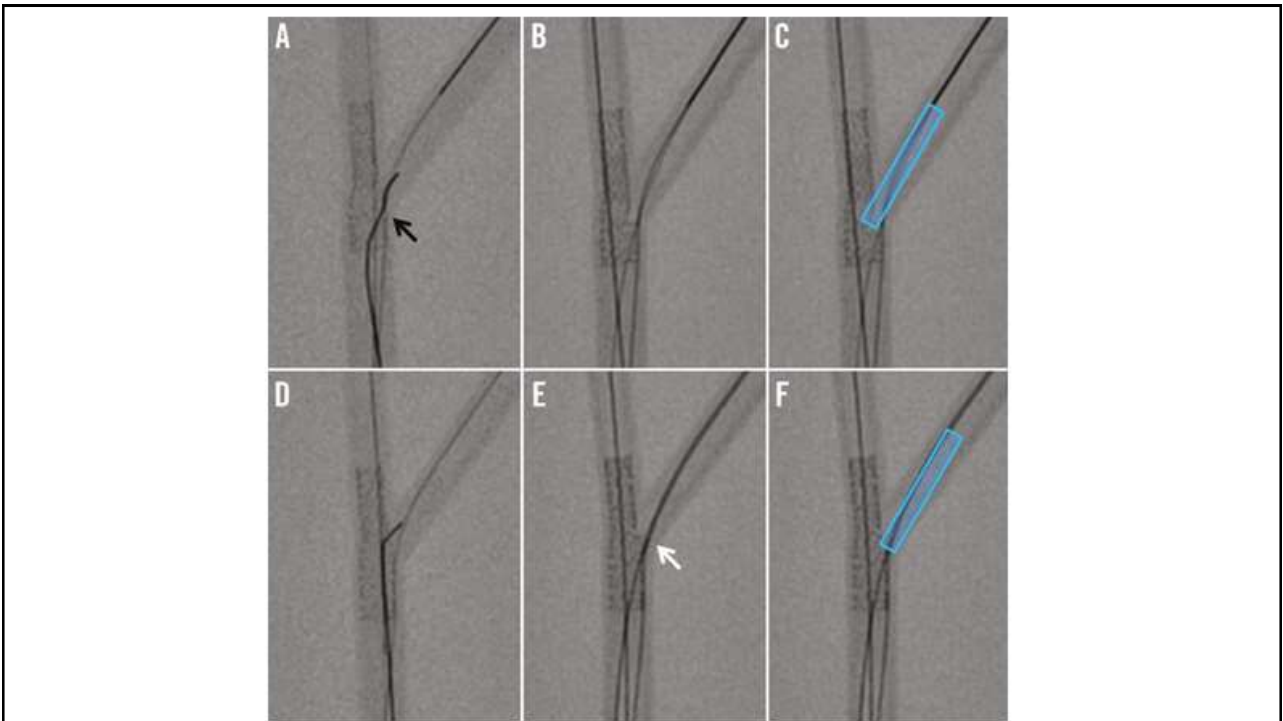
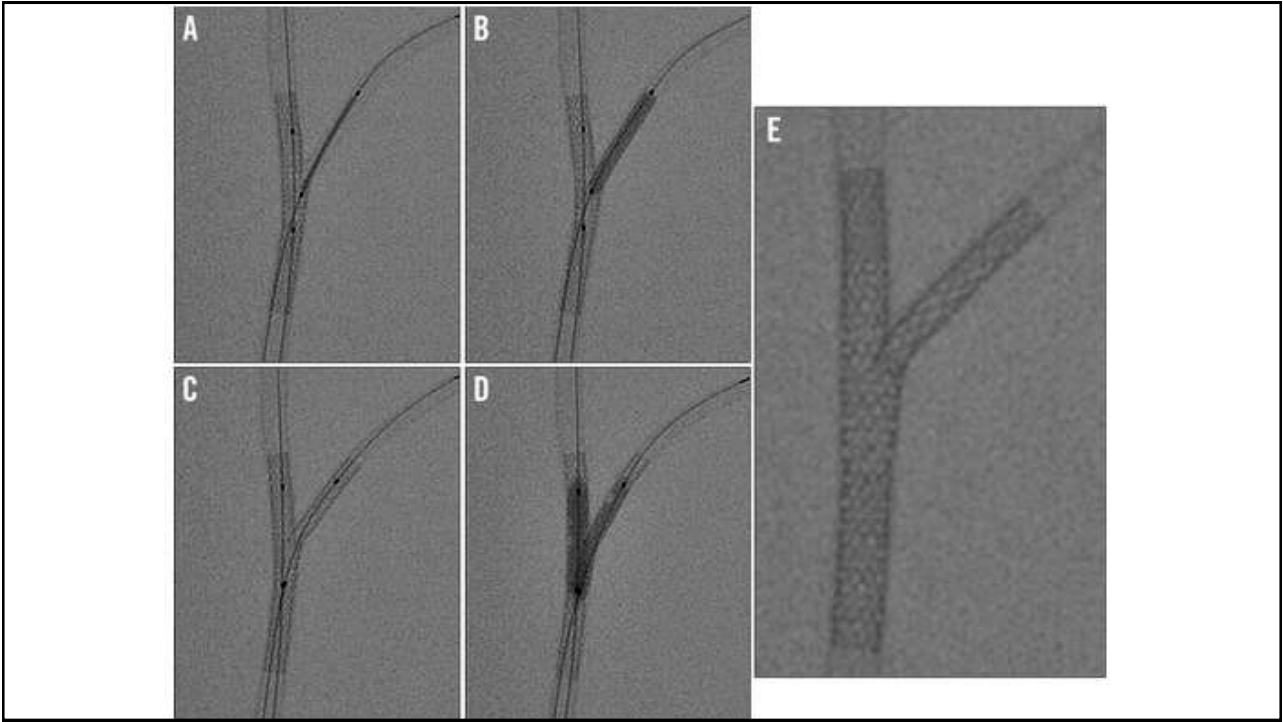
- Refined kiss
  - Increase FFR values in SB
  - Improve FFR in SB if previously low
  - Decrease restenosis and thrombus formation

## SB stent techniques

- SB flow compromised
- Major dissection
- SB diseased

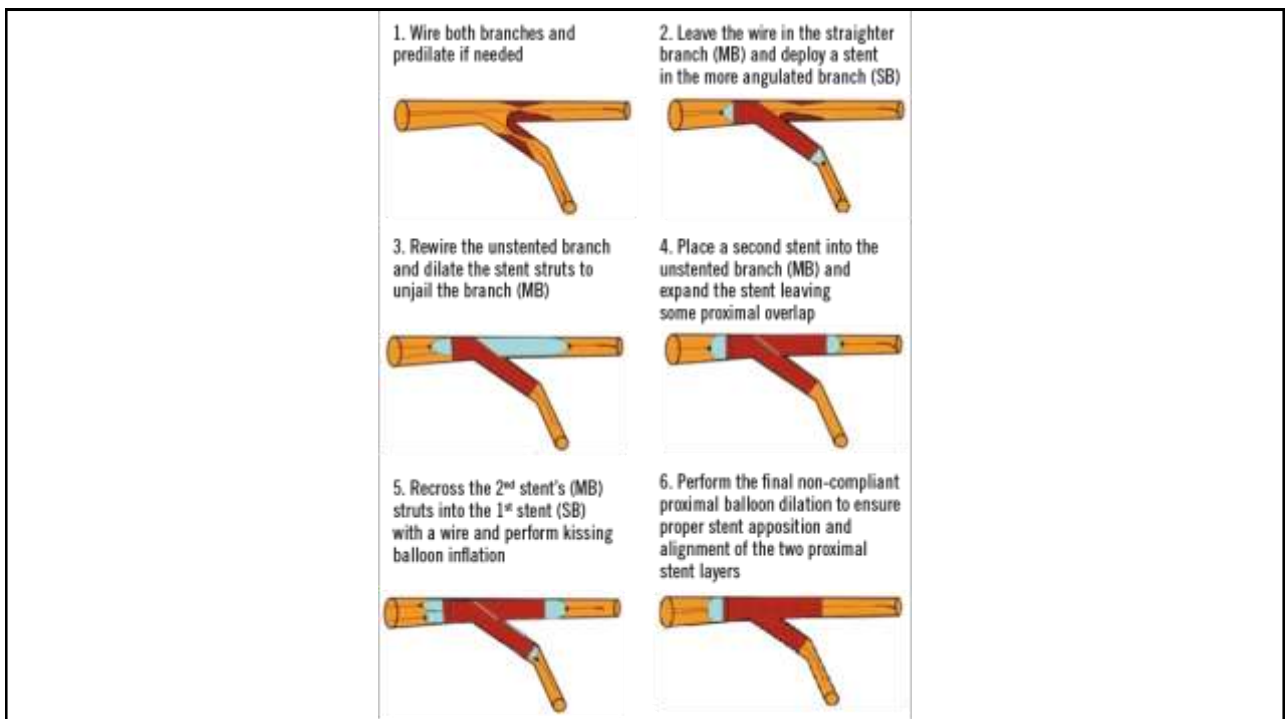
## SB stent techniques

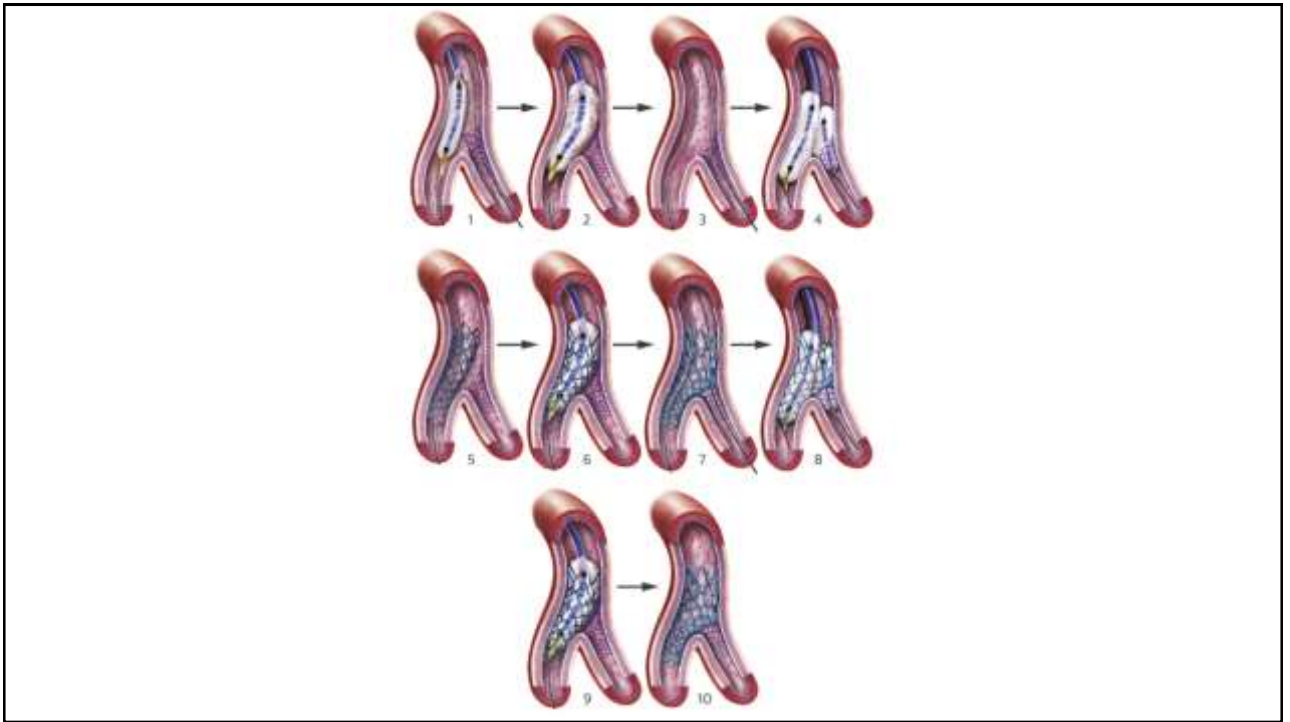
- TAP stenting
  - Advantages:
    - Better covering
    - Eliminate the need for second rewiring
  - Disadvantages
    - Long metal carina



## SB stent techniques

- Provisional Culotte
  - DES that can accommodate proximal MV
  - Rewiring near the carina





Kissing balloon in two stent  
technique

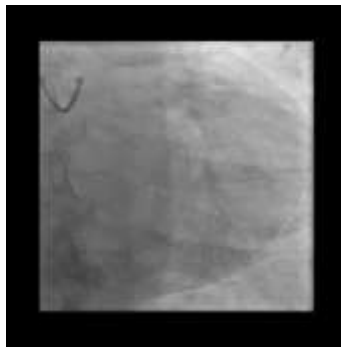
**Mandatory**

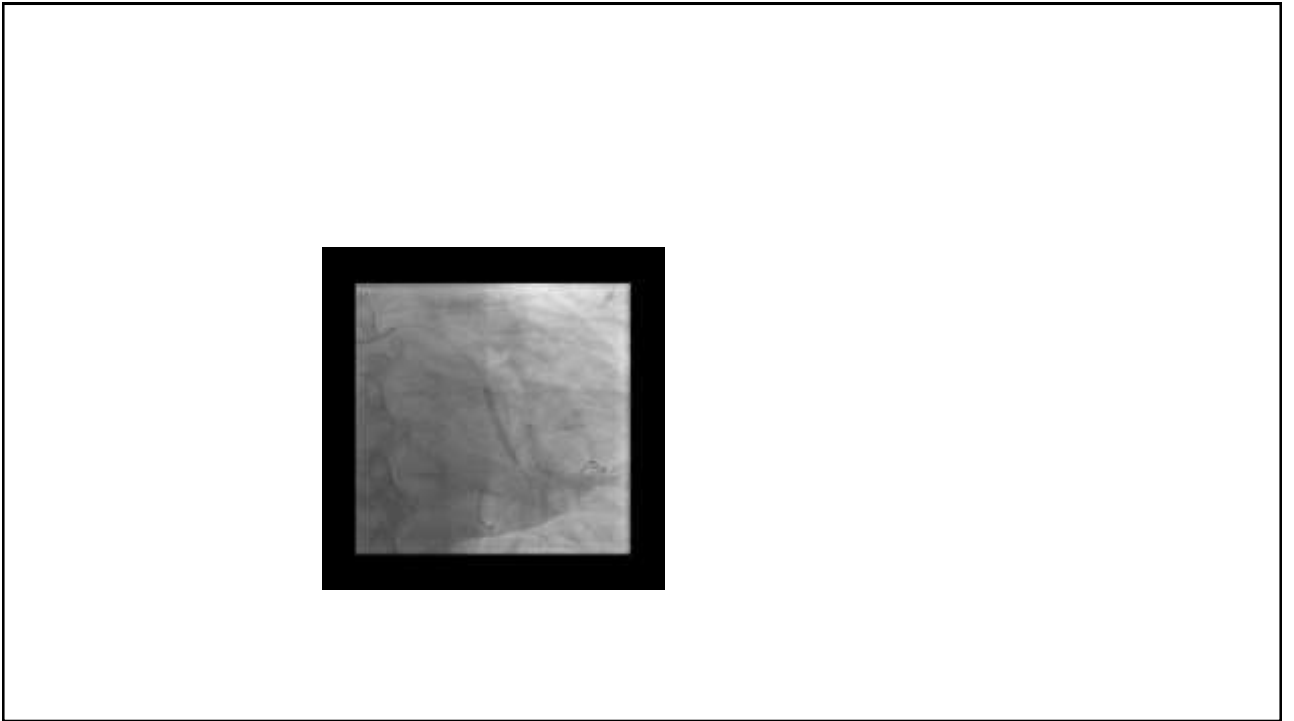


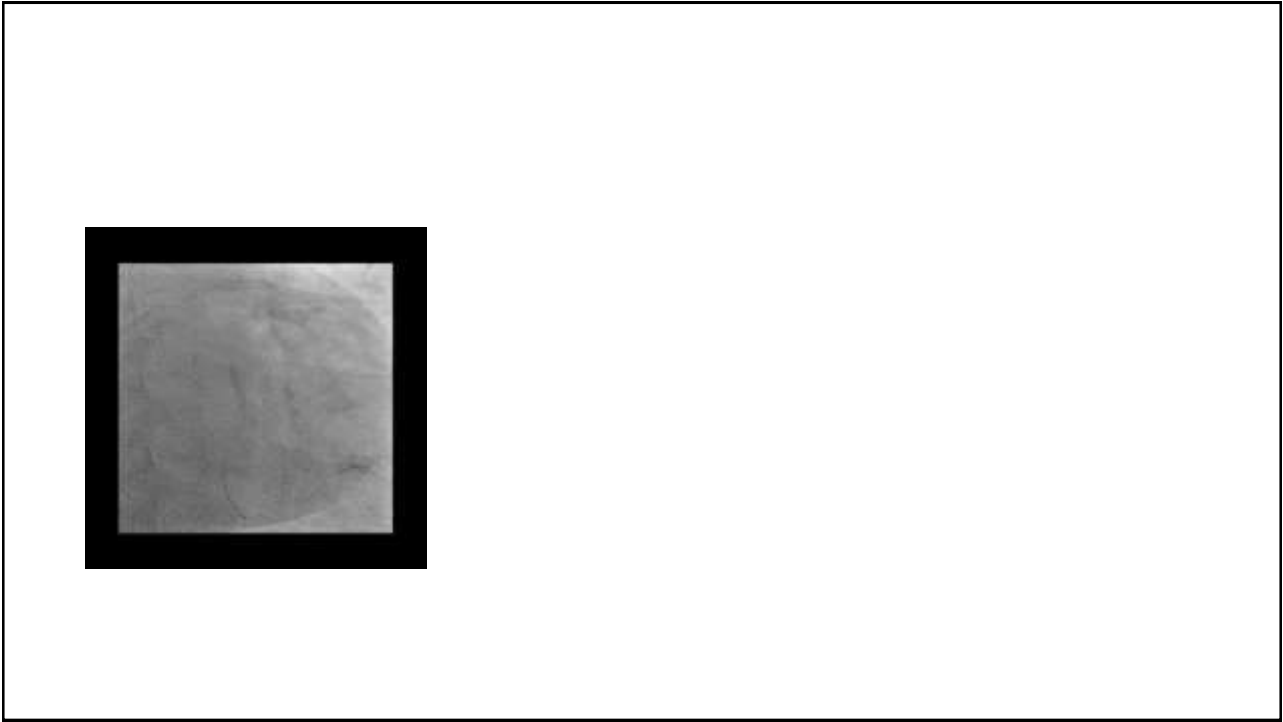
Mailability is the key

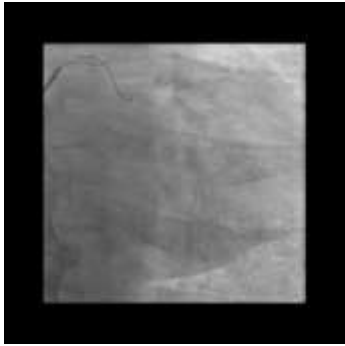
---

# Example



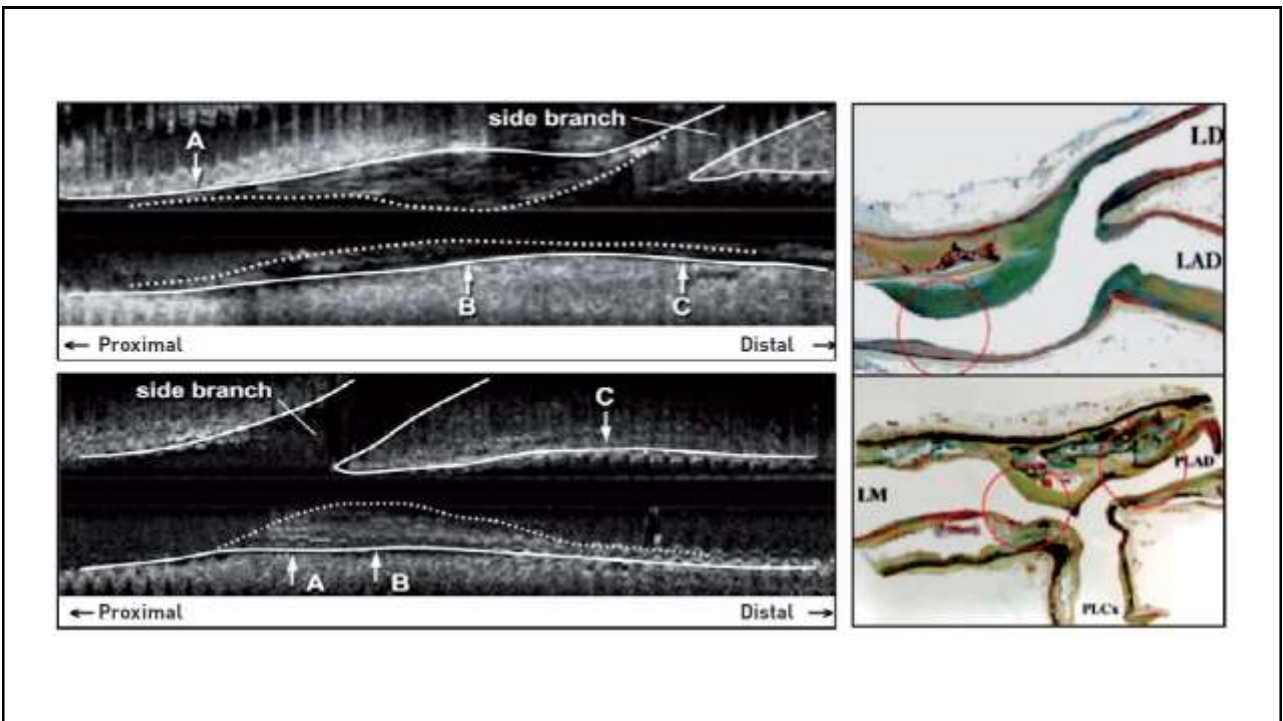
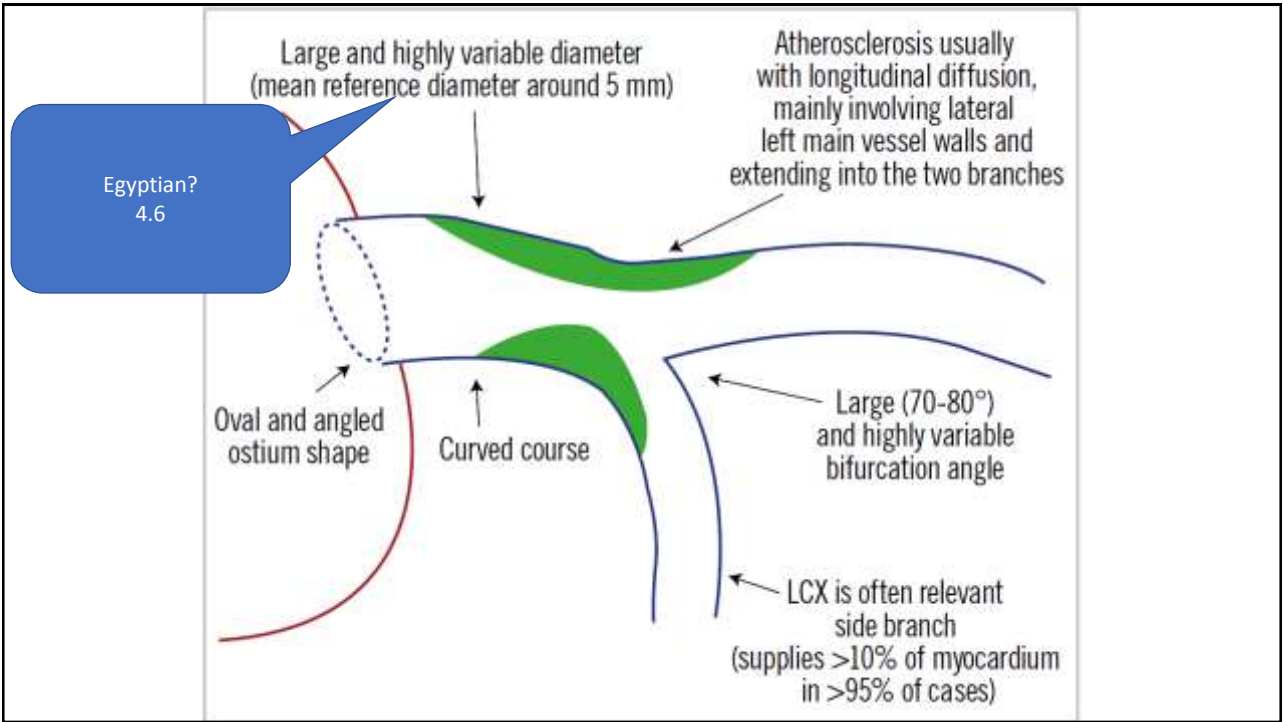






# LM intervention

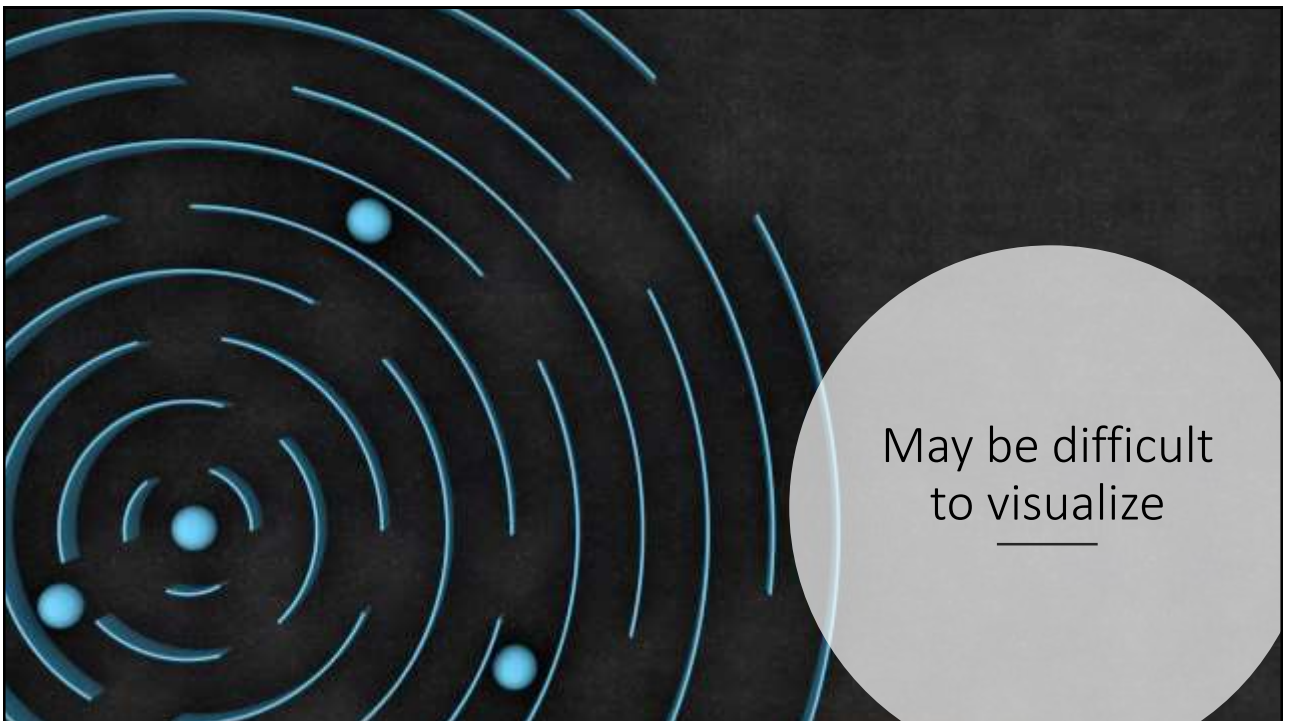
What is different?



Lesion more than 50% and evidence of ischemia

---

# When to treat LM?



May be difficult  
to visualize

# IVUS



MLA 6 mm<sup>2</sup>



OCT?

# Pressure wire



Equalization



Measurement



Diffusely diseased distal arteries

# Patient selection

Heart team

PCI LM team



Intervention cardiologist



Nurses



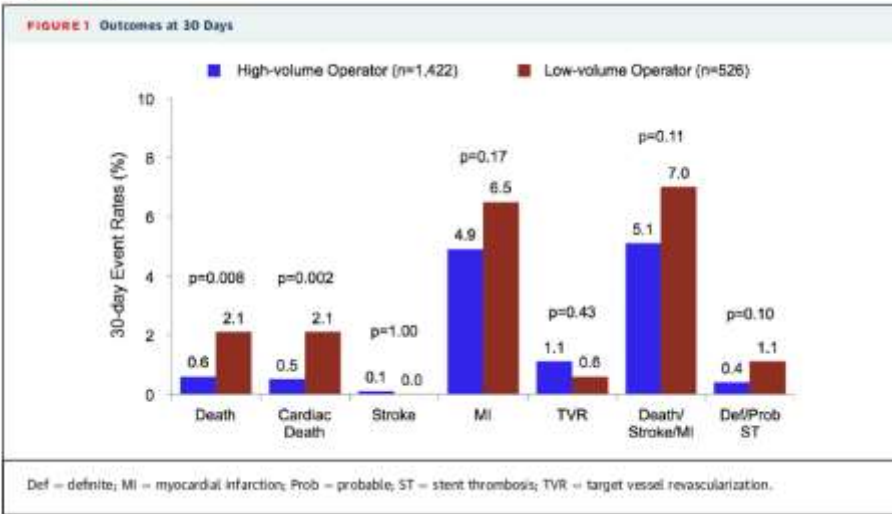
Technicians



## Impact of Operator Experience and Volume on Outcomes After Left Main Coronary Artery Percutaneous Coronary Intervention



Fei Xu, MBS,<sup>1</sup> Allen Kodfina, MD, PhD,<sup>1,2</sup> Yanjun Yang, MD,<sup>1</sup> Shubin Qian, MD,<sup>1</sup> Yongjun Wu, MD,<sup>1</sup> Jilin Chen, MD,<sup>1</sup> Huihui Liu, MD,<sup>1</sup> Jue Chen, MD,<sup>1</sup> Liang Xu, MD,<sup>1</sup> Yanxin Zhao, BS,<sup>1</sup> Changdong Guo, MS,<sup>1</sup> Xiaofei Guo, MD,<sup>1</sup> Philippe Grollman, MD<sup>1,3,4</sup>



The equipment



ELECTIVE



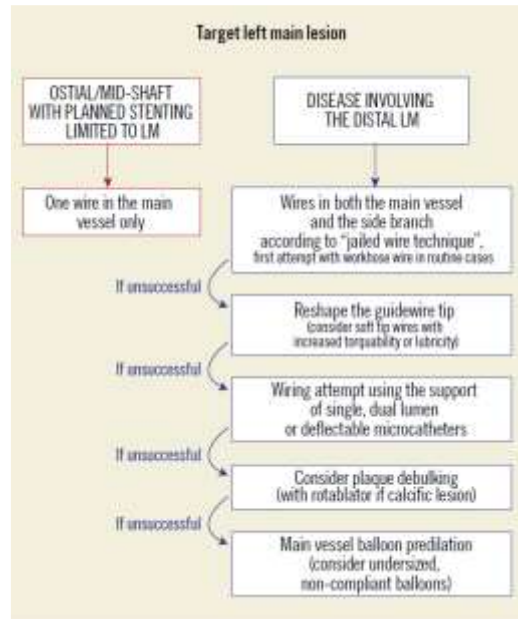
PREPARE



BE READY WITH HEMODYNAMIC SUPPORT

# Setup for LM stenting

LM wiring



# Setup for LM stenting



Predilation

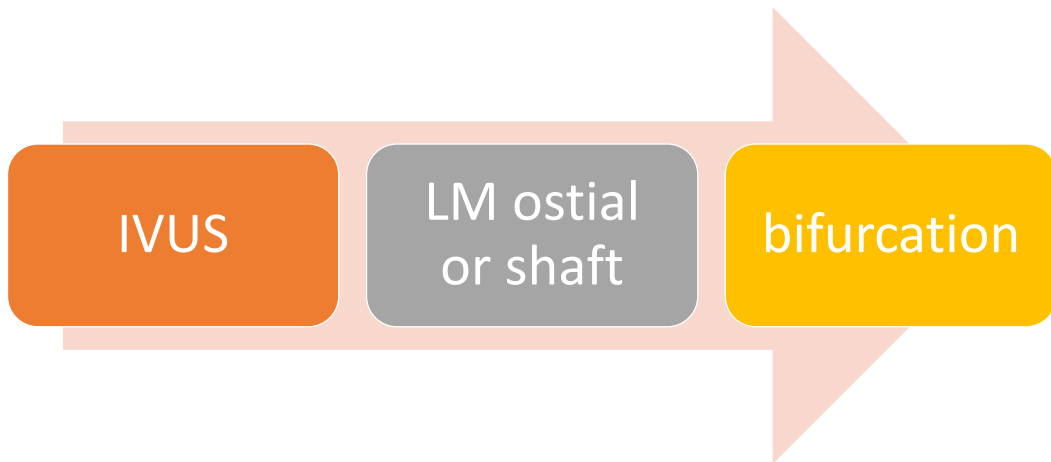


Debulking



Side branch pre dilation

## LM stent sizing



## LM stent sizing

DES type	DES sizes	Maximal expansion according to IFU
XIENCE Sierra	2.25-3.25 mm	3.75 mm
	3.5-4.0 mm	5.50 mm
Resolute Onyx	2.25-2.5 mm	3.25 mm
	2.75-3.0 mm	3.75 mm
	3.5-4.0 mm	4.75 mm
	4.5-5.0 mm	5.75 mm
SYNERGY	2.25-2.75 mm	3.50 mm
	3.0-3.5 mm	4.25 mm
	4.0 mm	5.75 mm
Ultimaster	2.25-3.0 mm	3.50 mm*
	3.5-4.0 mm	4.50 mm*
Orsiro	2.25-3.0 mm	3.50 mm
	3.5-4.0 mm	4.50 mm

\*manufacturer's advice, not in IFU.

## LM bifurcation stenting technique



According to the patient  
anatomical features

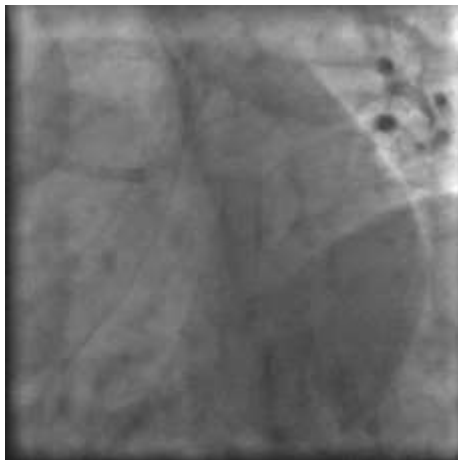
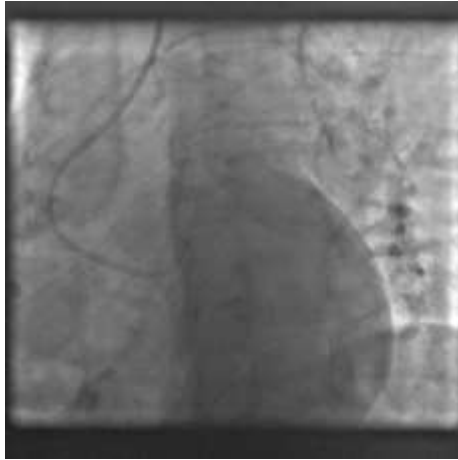


Provisional is preferred when  
severe disease is not involving  
both branches.

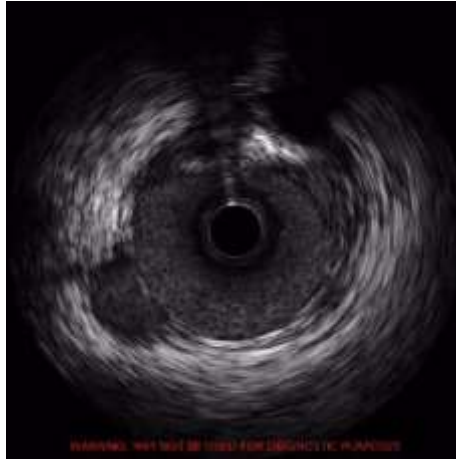
Do not leave with doubt!

---

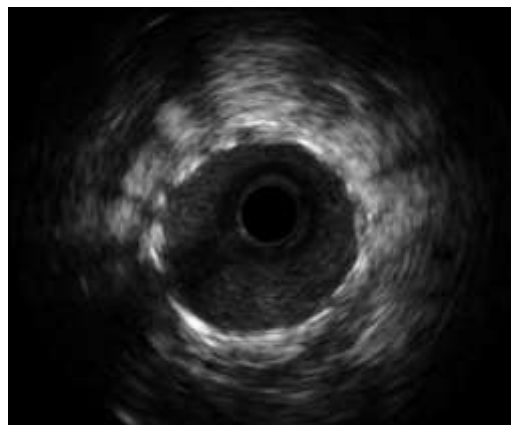
## Case example



# IVUS from Cx



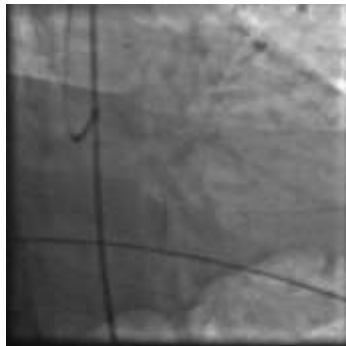
# IVUS LM post

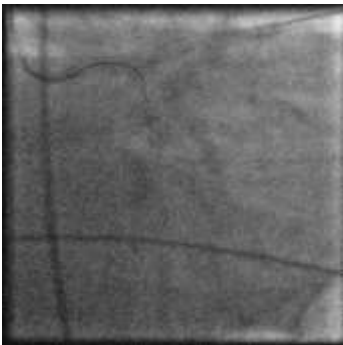
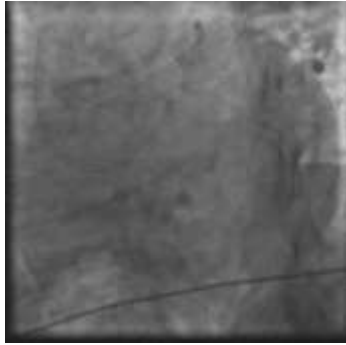


Keep it simple

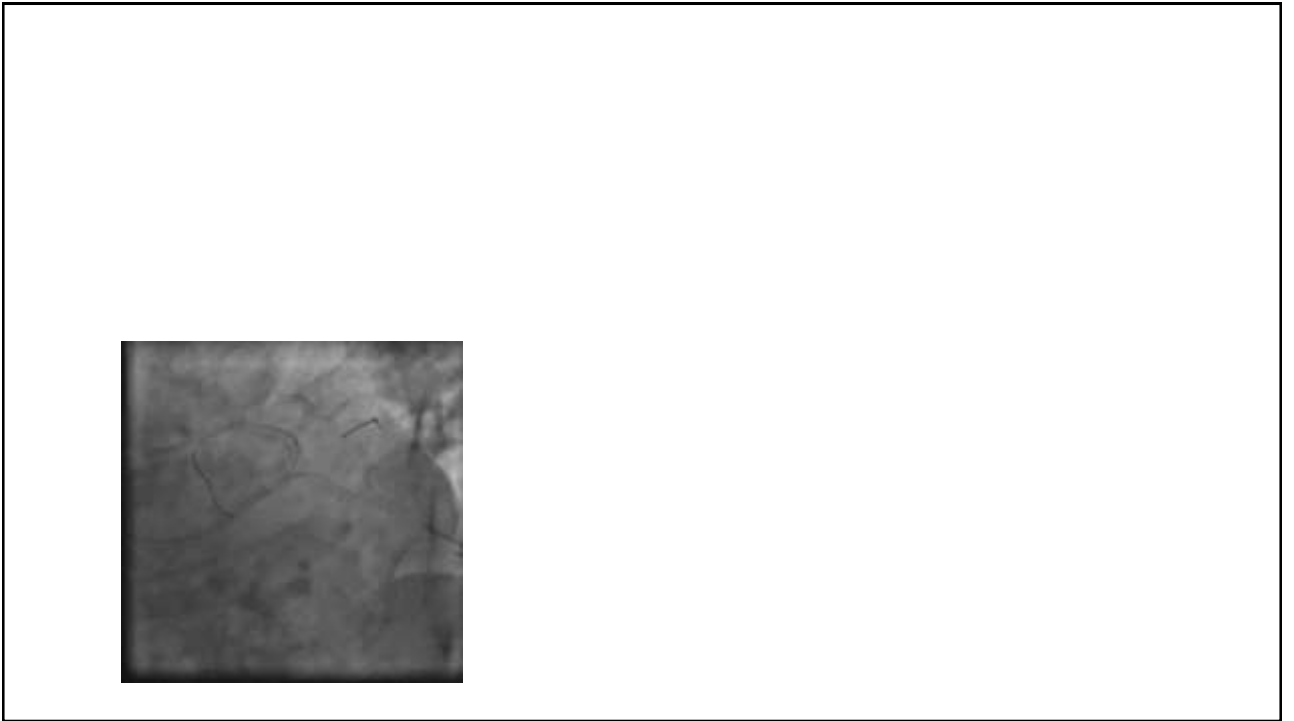
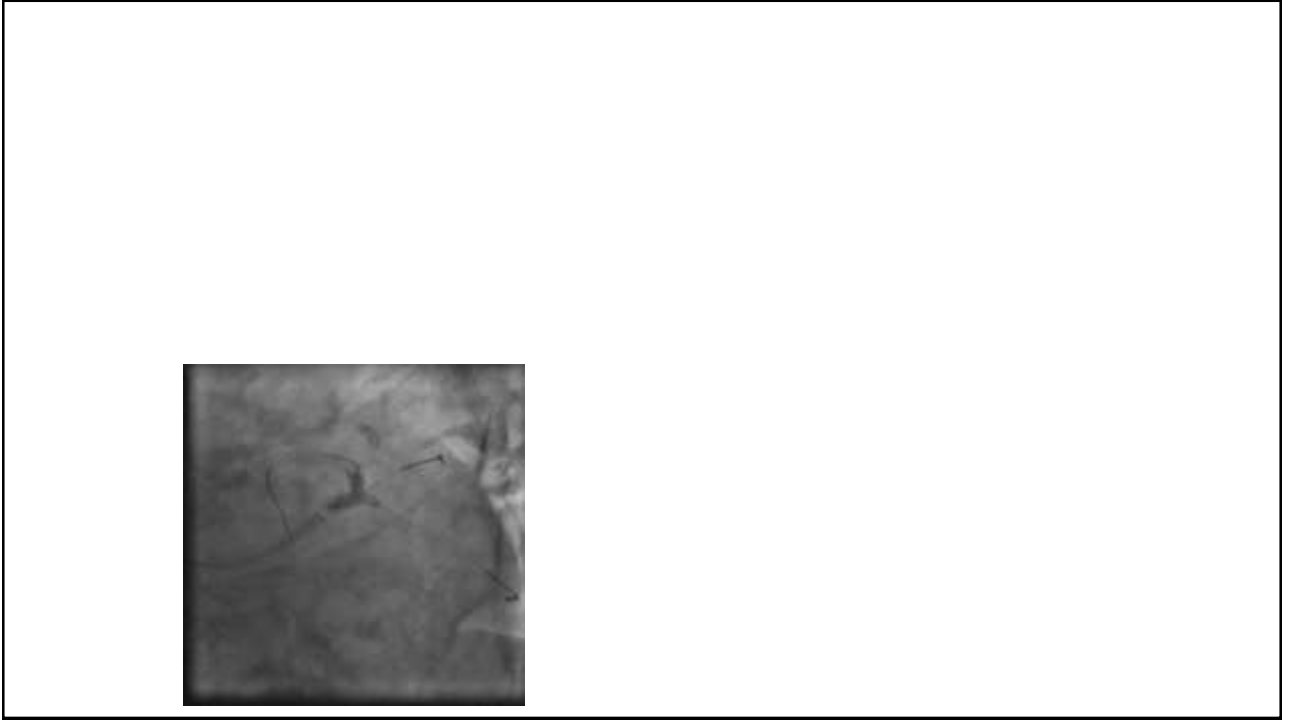
---

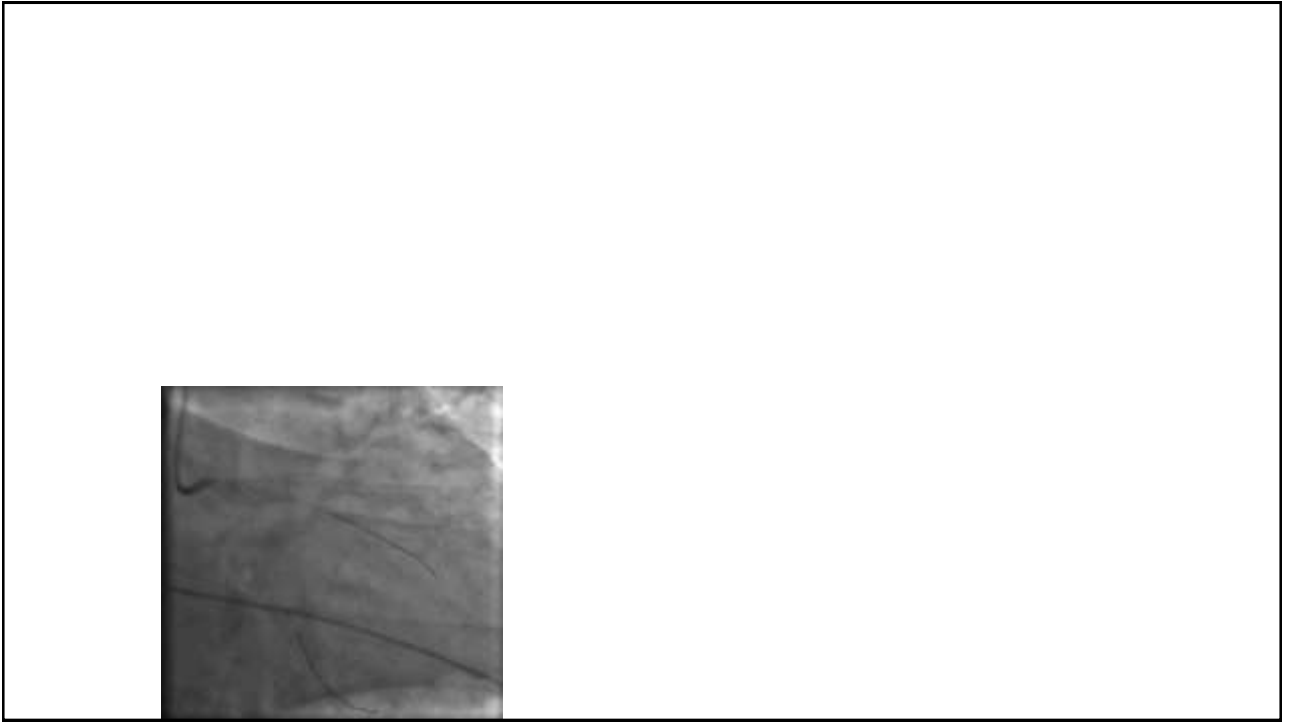
## Case 2







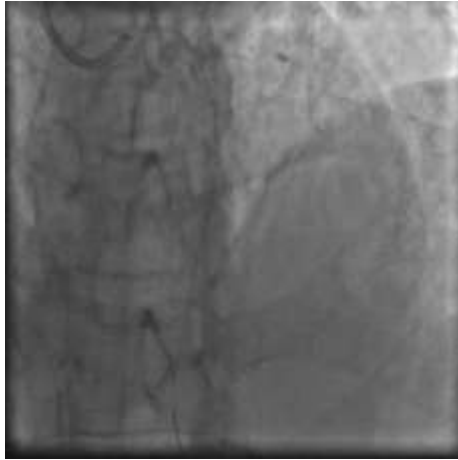




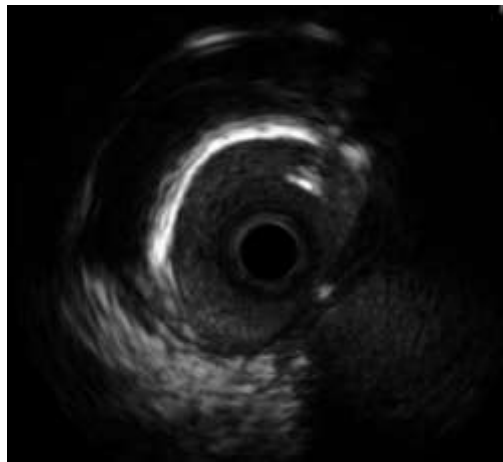
IABP still here

---

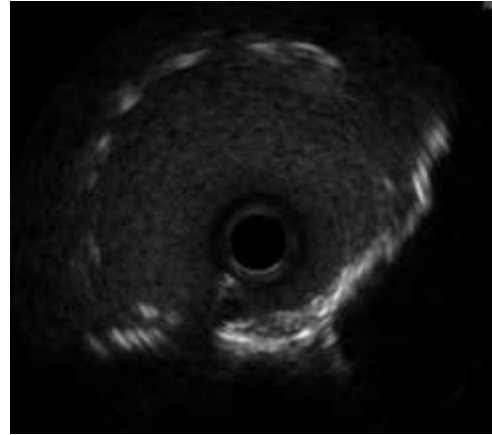
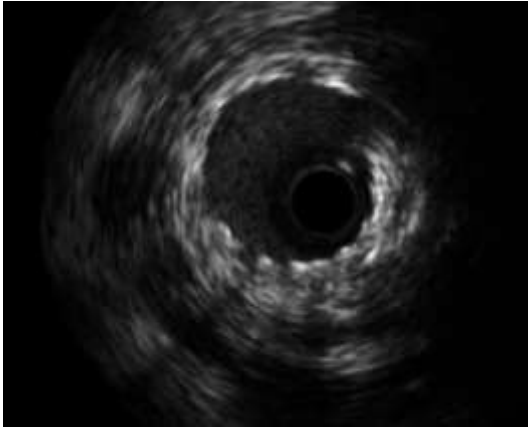
Case



IVUS pre



IVUS post



Final angio

