

Case Based Learning

Non-left main bifurcation lesion

Bon-Kwon Koo, MD, PhD

Seoul National University Hospital, Seoul, Korea

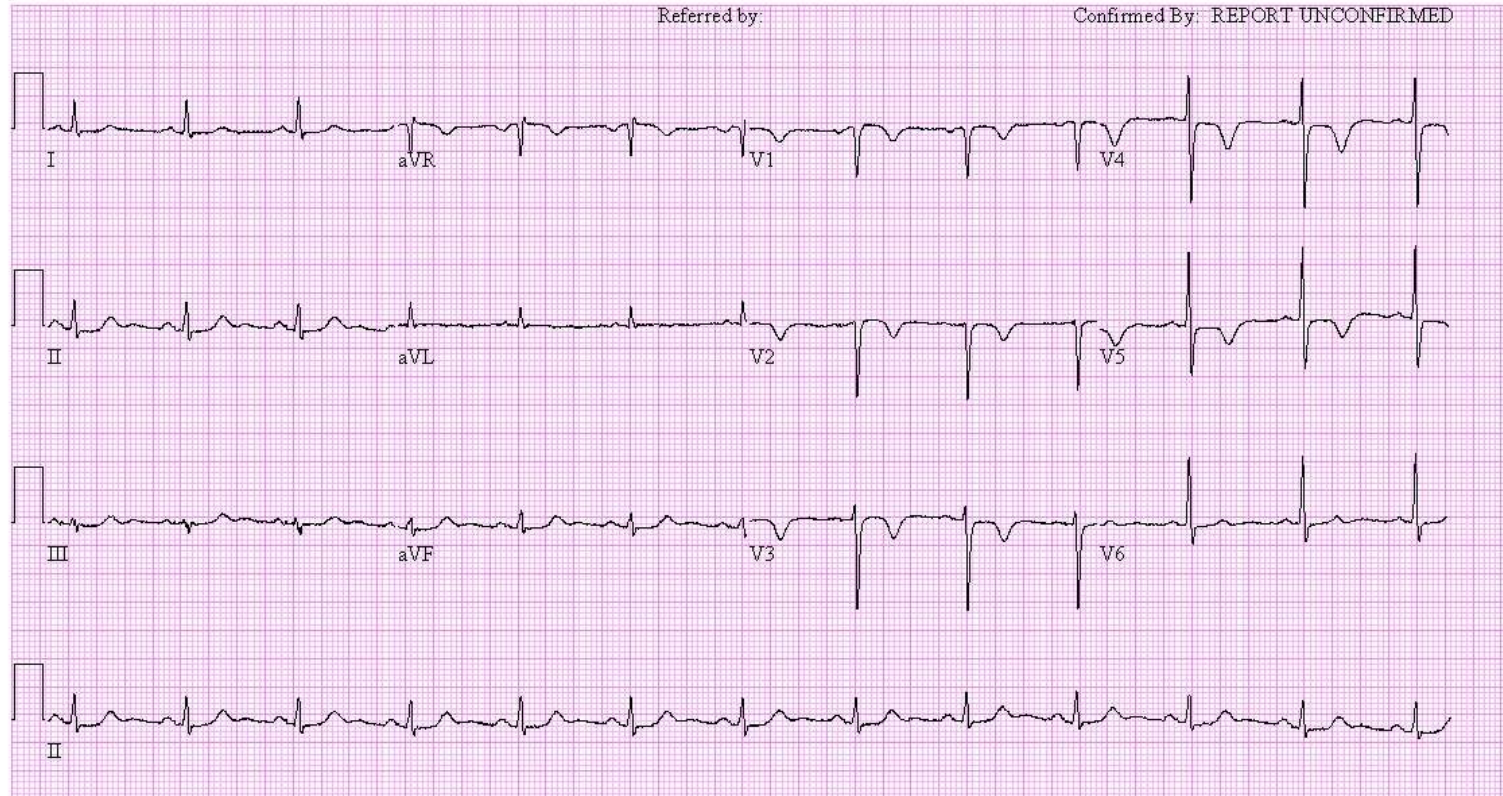


M/61

- Angina for 3 years, Crescendo in recent 10 days
- Visit 2ndary hospital
 - CAG
 - Coronary artery bypass surgery was recommended but refused.

- Risk factor: Hypercholesterolemia

M/61 Unstable angina

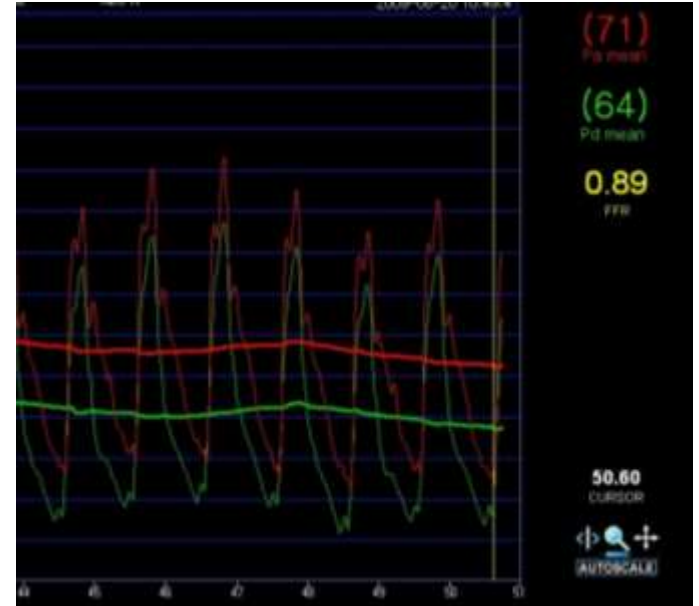


Echocardiography

: normal LV function, no regional wall motion abnormality

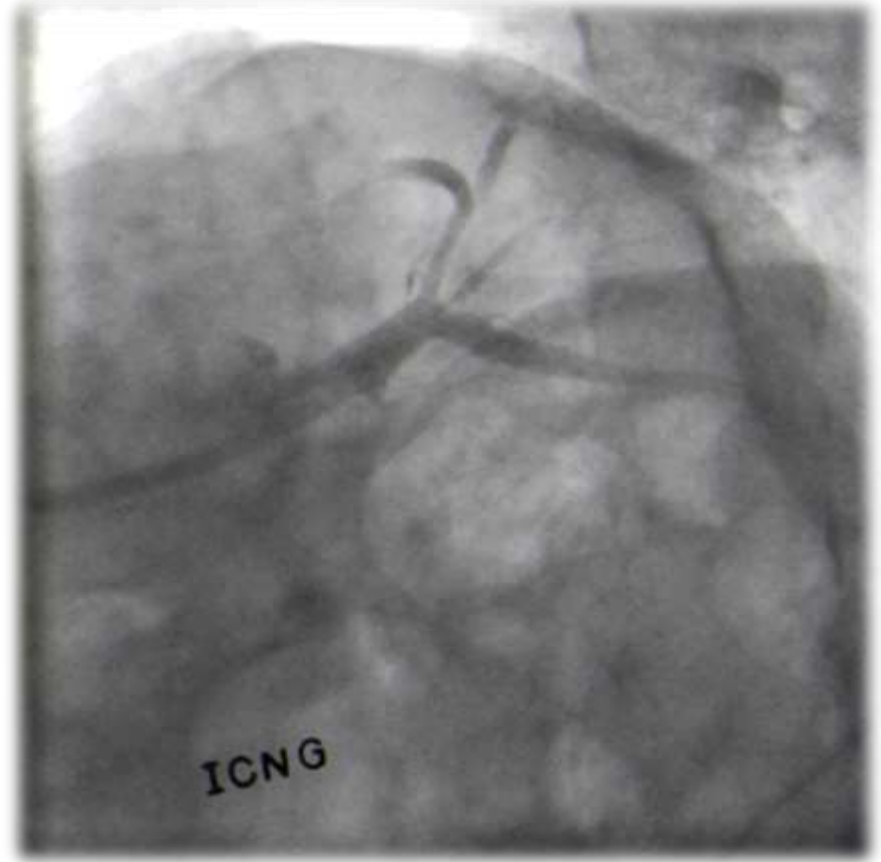
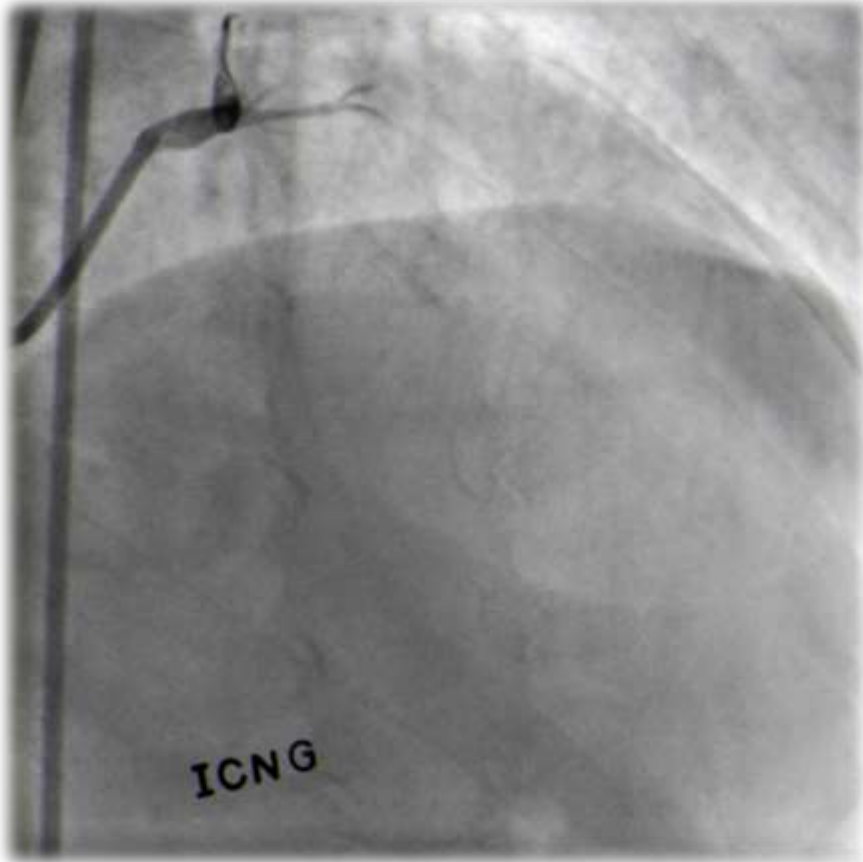
M/61 Unstable angina

Coronary Angiography



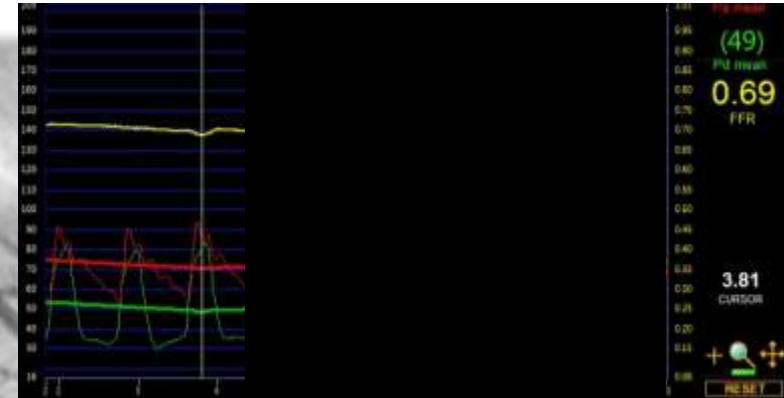
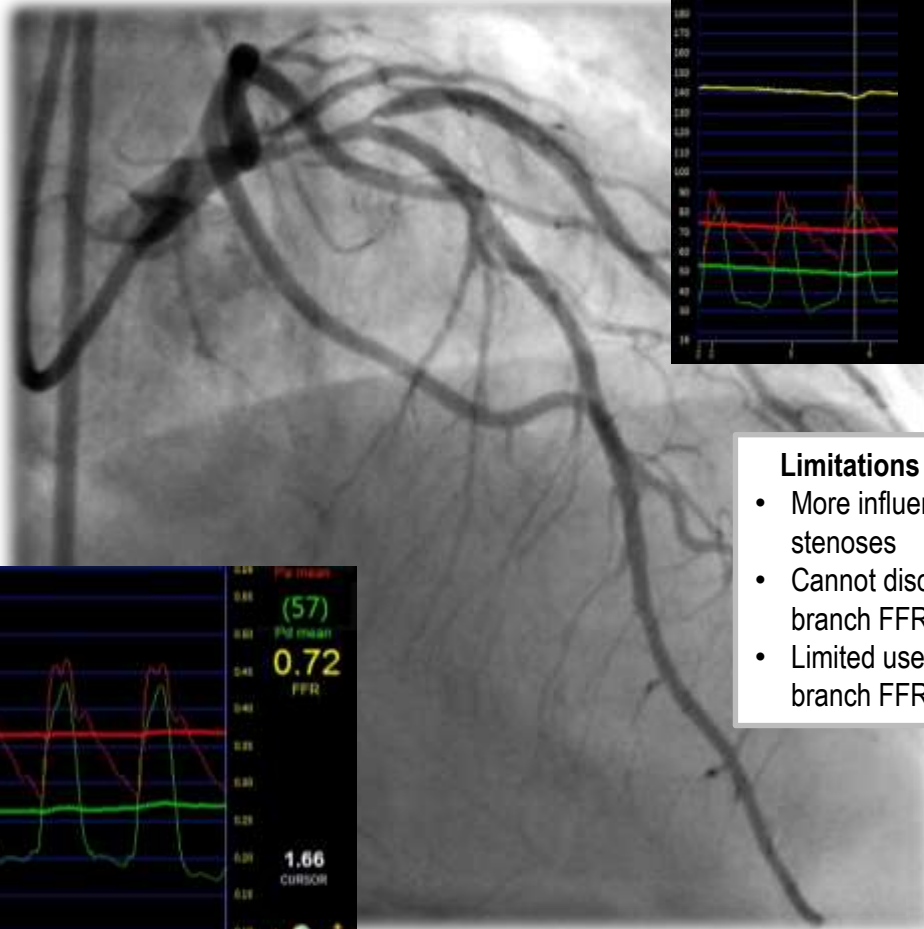
M/61 Unstable angina

Coronary Angiography



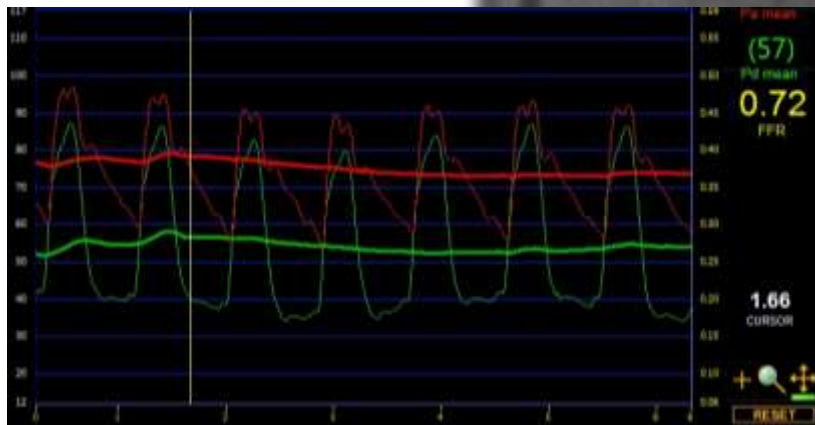
How to assess this lesion?

FFR



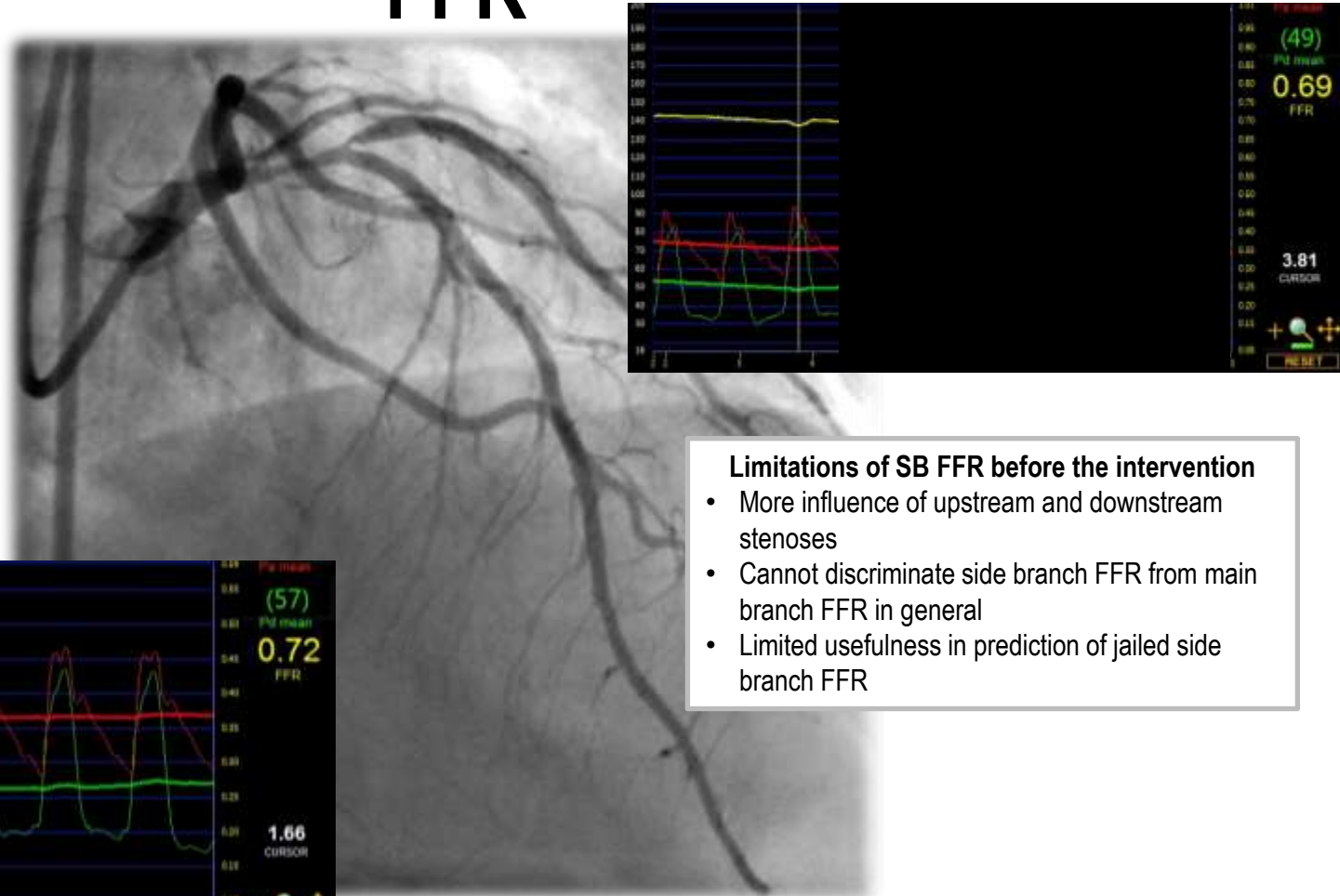
Limitations of SB FFR before the intervention

- More influence of upstream and downstream stenoses
- Cannot discriminate side branch FFR from main branch FFR in general
- Limited usefulness in prediction of jailed side branch FFR



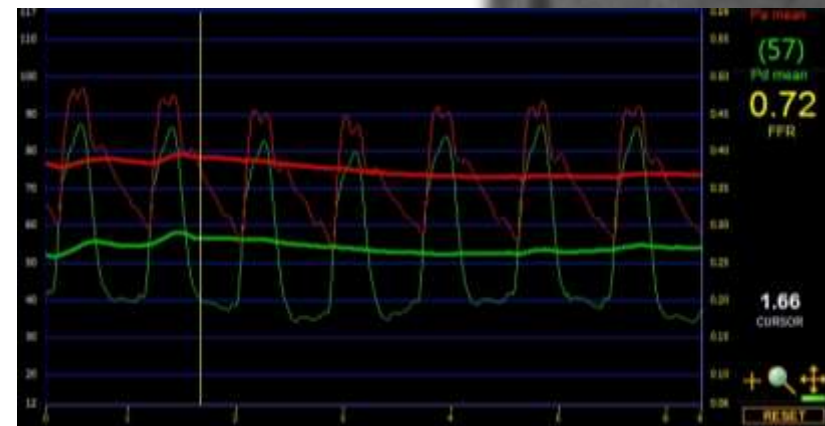
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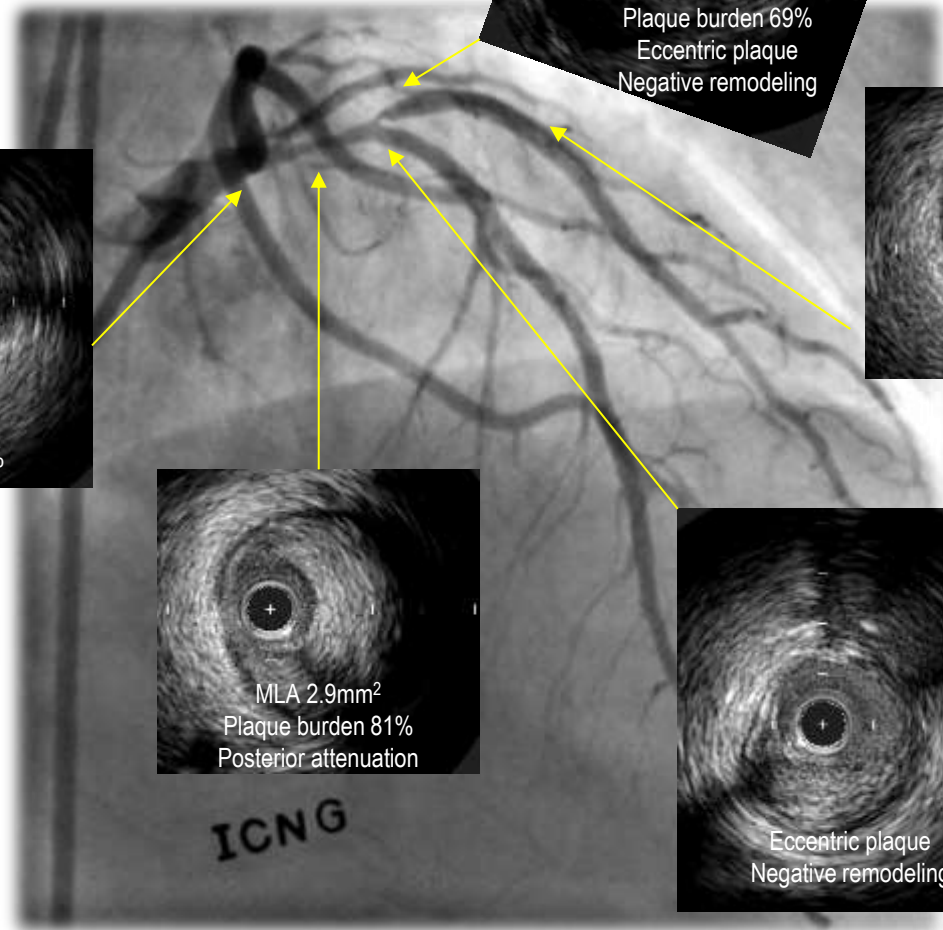
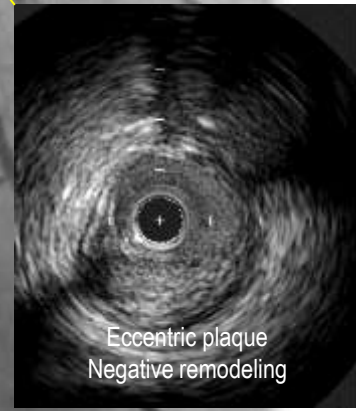
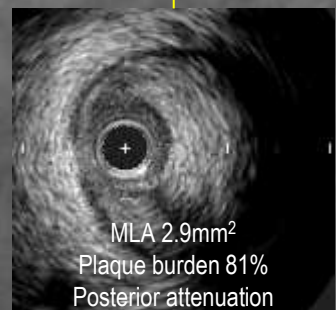
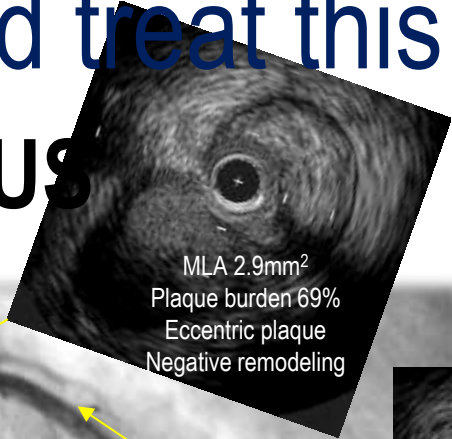
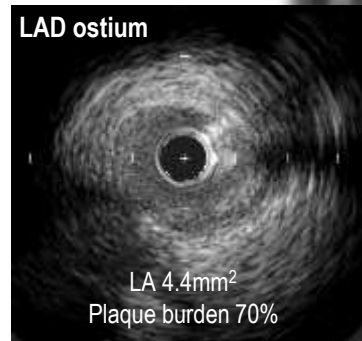
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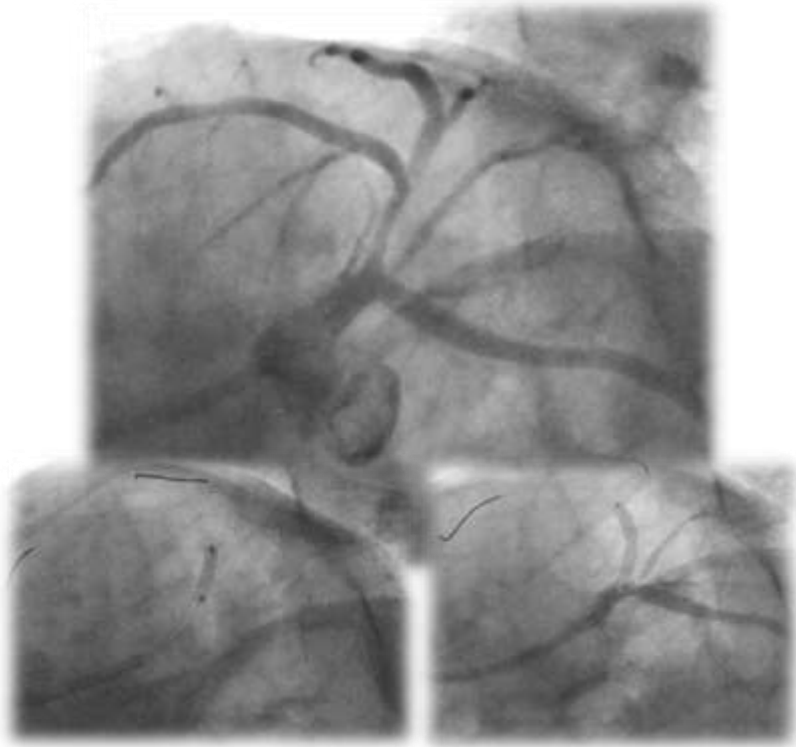


How to assess and treat this lesion?

IVUS

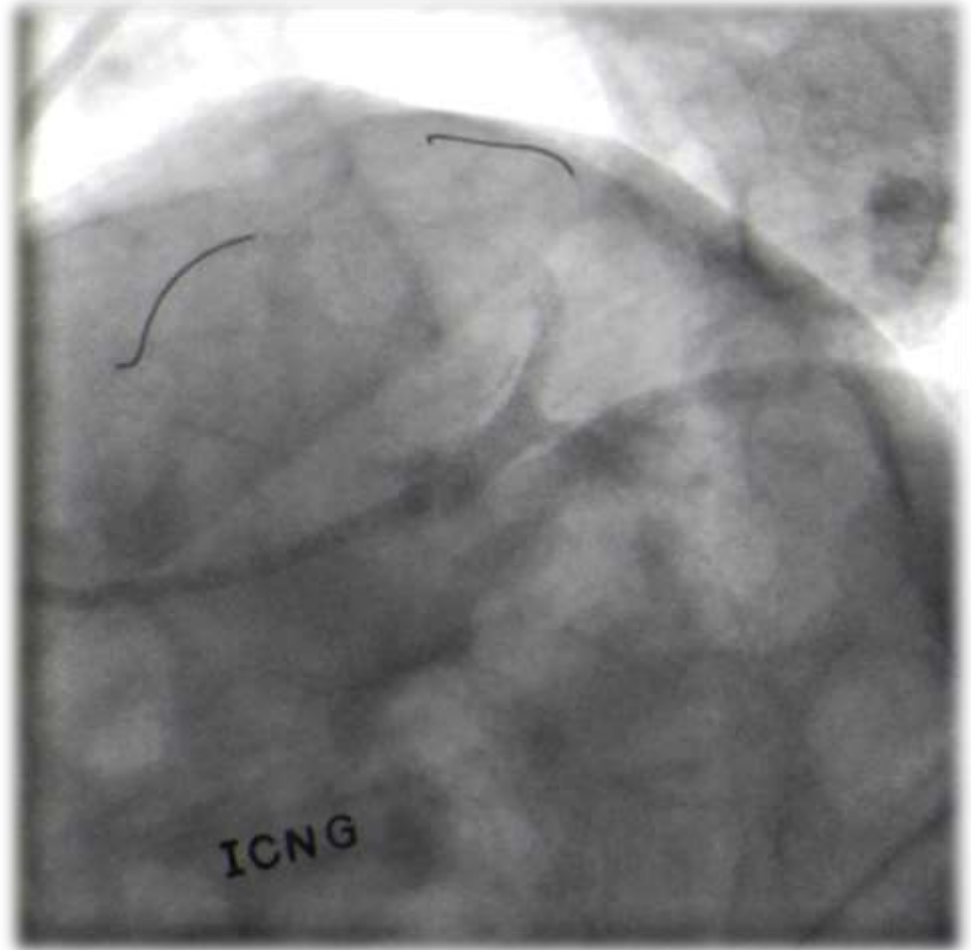


Provisional SB intervention



Predilatation: 3x15mm balloon

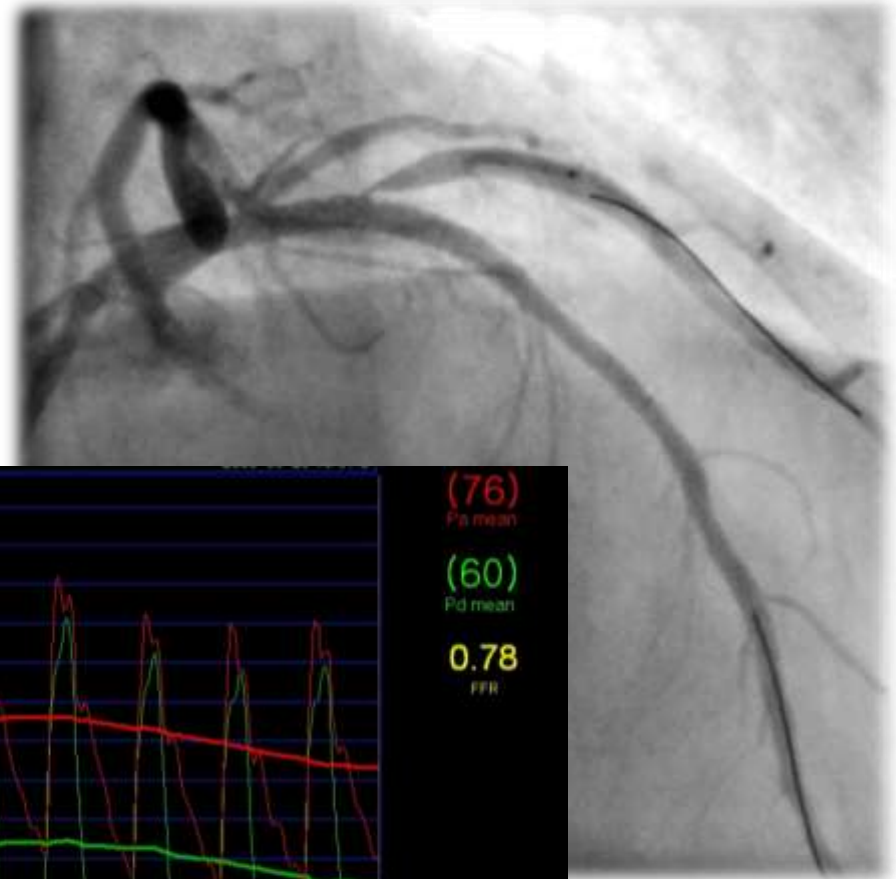
Stent: DES 3x28mm



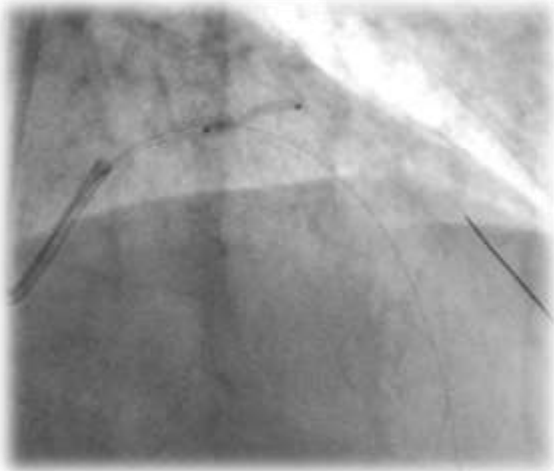
Provisional SB intervention



Pressure Wire recrossing to SB
→ Adjunctive balloon



Provisional SB intervention



SB angioplasty

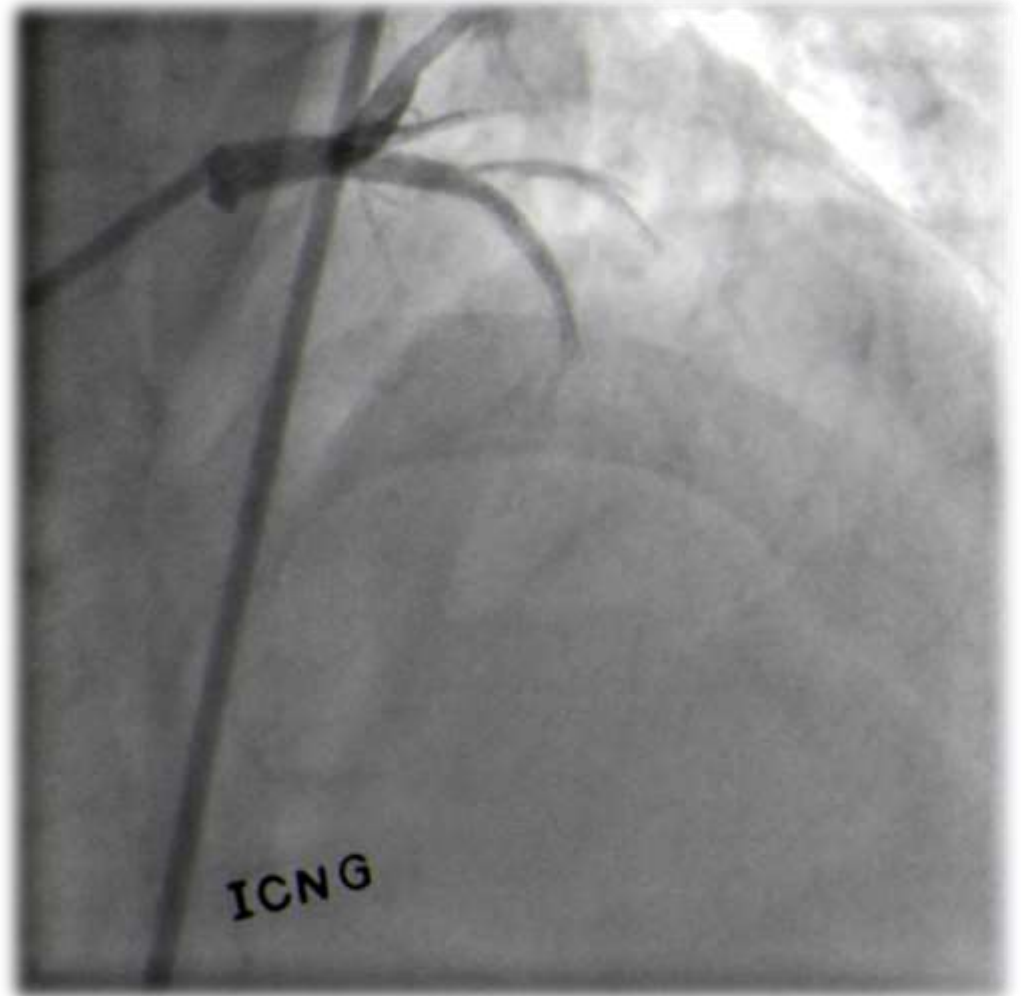
: 1.5x20mm → 2.0x20mm

Kissing balloon angioplasty

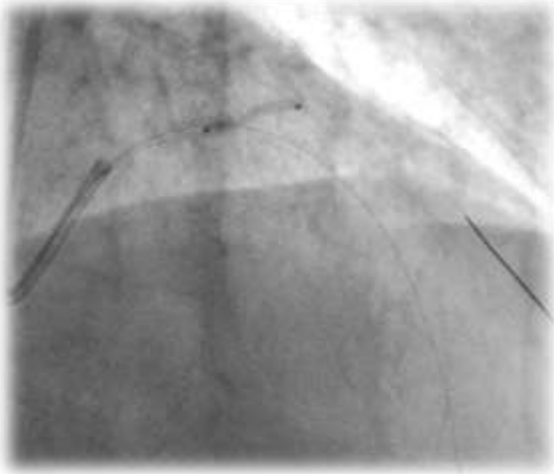
: 2.0x15mm + 3x10 mm

Proximal optimization

: 3.5x10mm



Provisional SB intervention



SB angioplasty

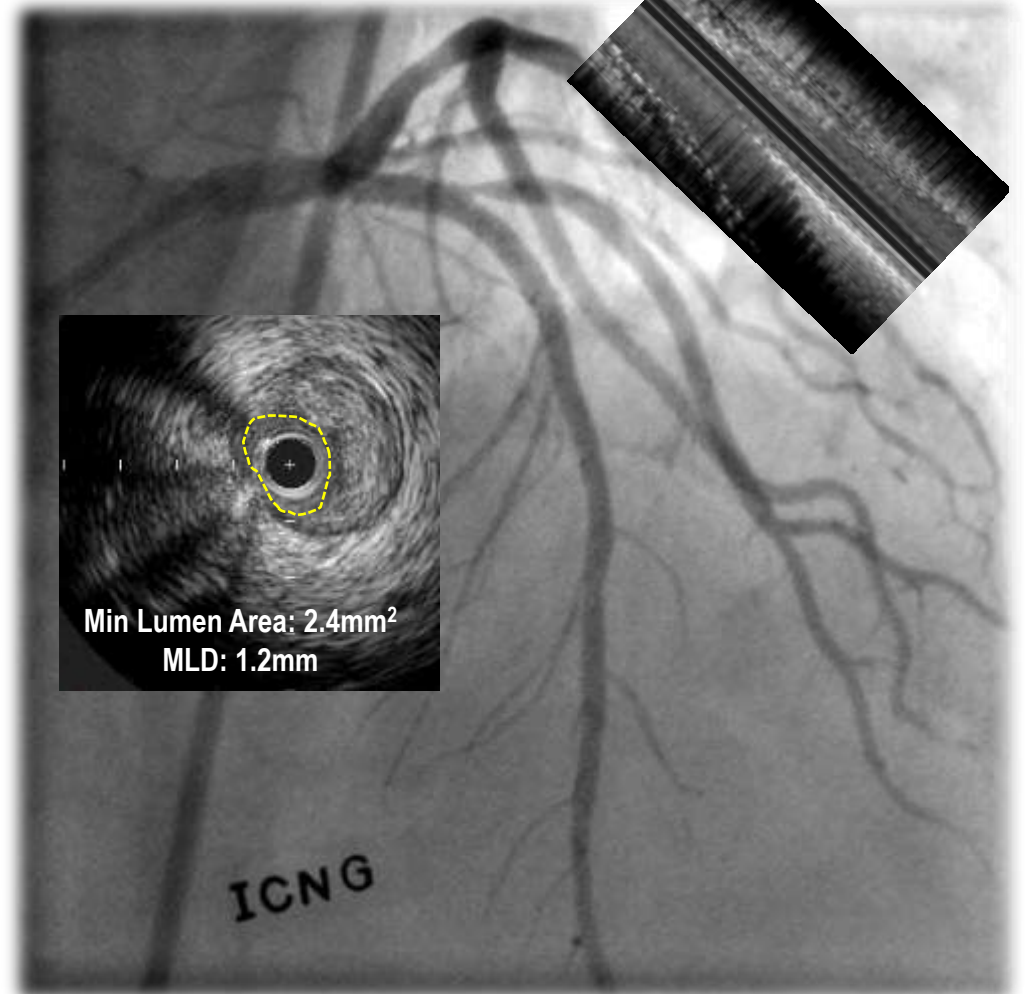
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Kissing balloon angioplasty

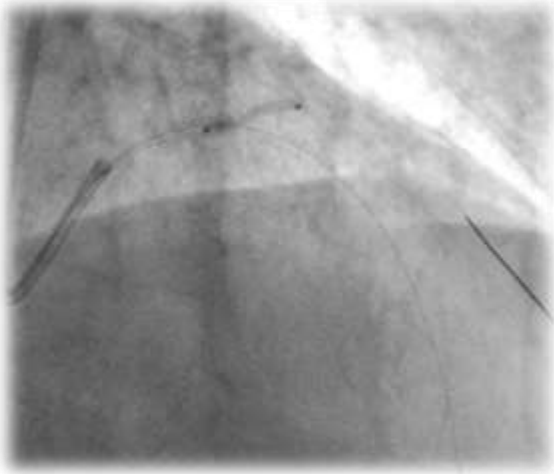
: 2.0x15mm + 3x10 mm

Proximal optimization

: 3.5x10mm



Provisional SB intervention



SB angioplasty

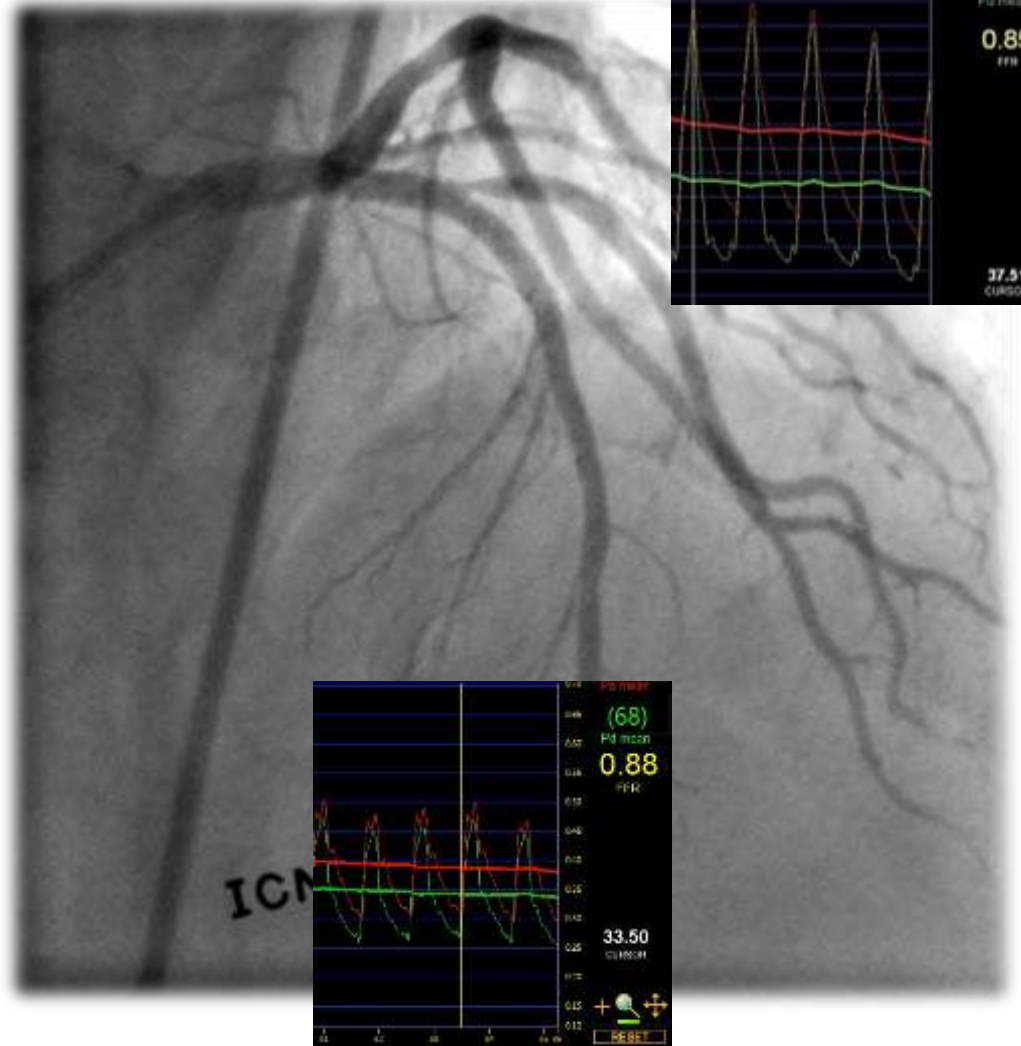
: 1.5x20mm → 2.0x20mm

Kissing balloon angioplasty

: 2.0x15mm + 3x10 mm

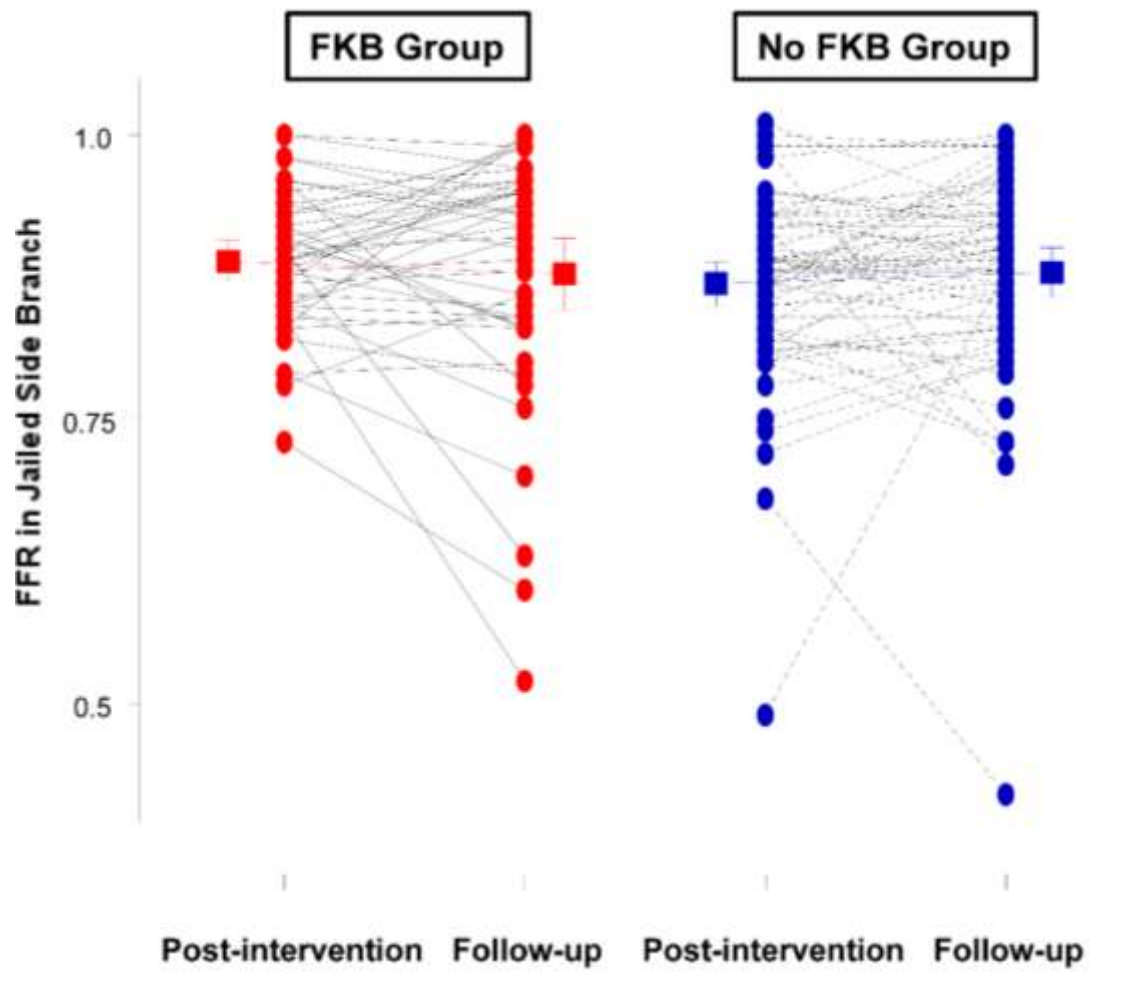
Proximal optimization

: 3.5x10mm



Serial FFR for jailed side branches

- SNUH registry and Nordic-Baltic bifurcation study -



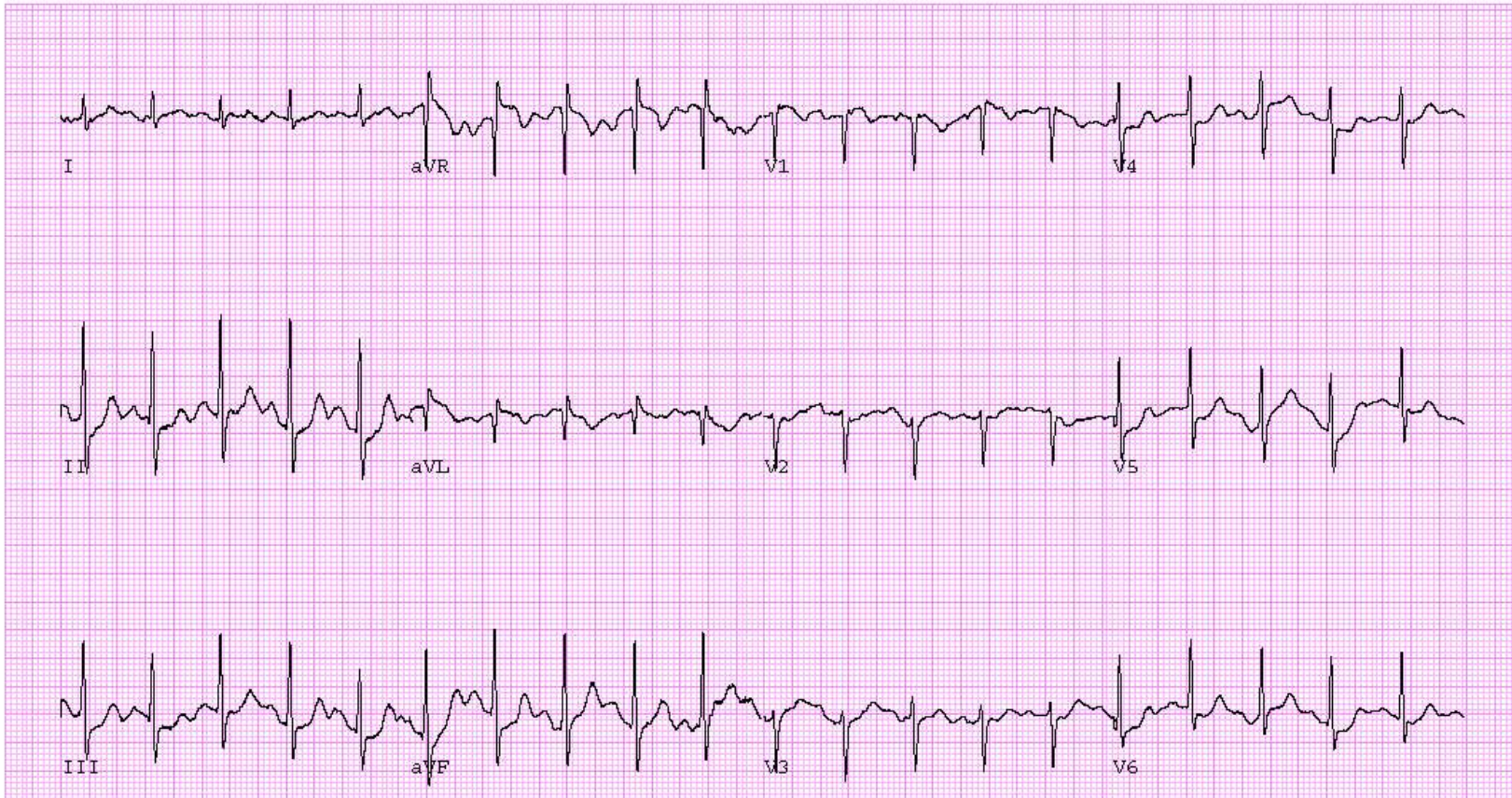
Exercise stress test (8mo after PCI)

10:15:09am

122 bpm

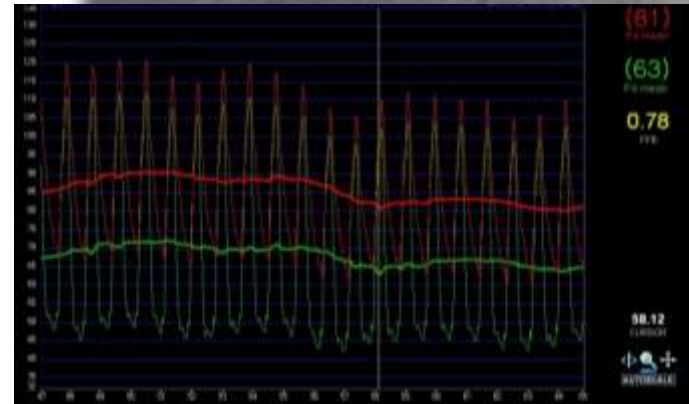
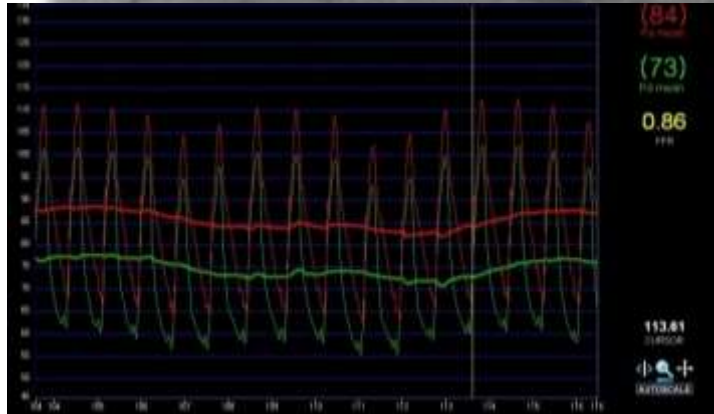
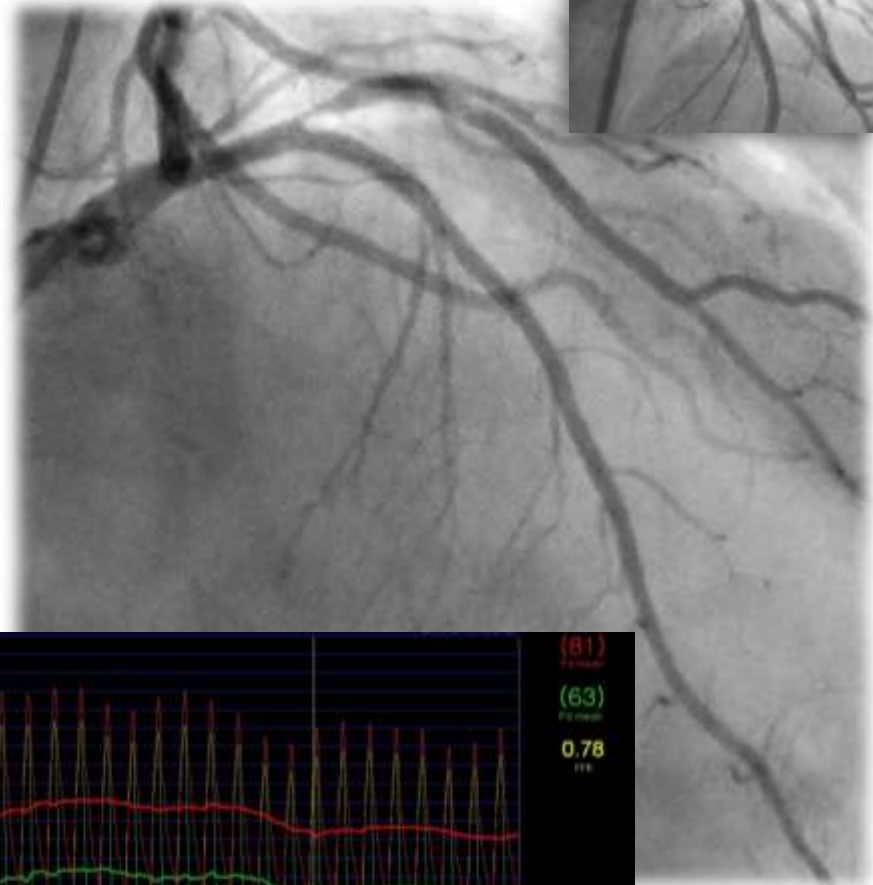
EXERCISE
STAGE 3
07:01

BRUCE
5.5 km/h
14.0 %



No significant ST depression, chest discomfort+

CAG 9mo after index PCI

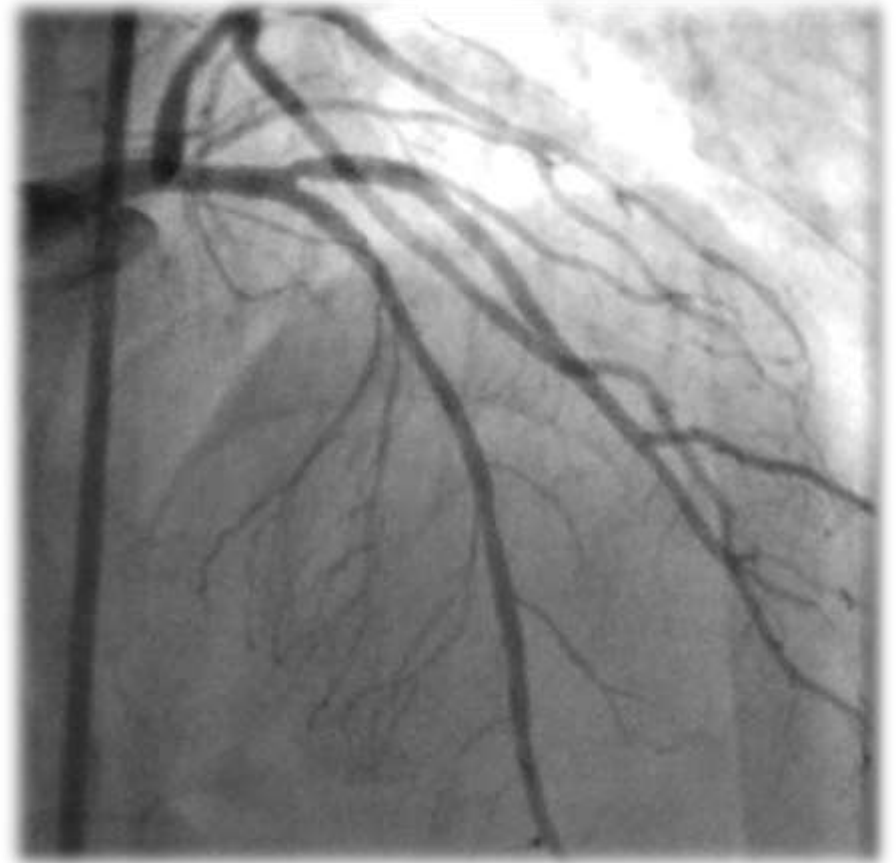


IVUS-guided SB stenting (Culotte style)

SB balloon: 3x15mm

DES 3x18mm

LAD balloon: 3x15mm

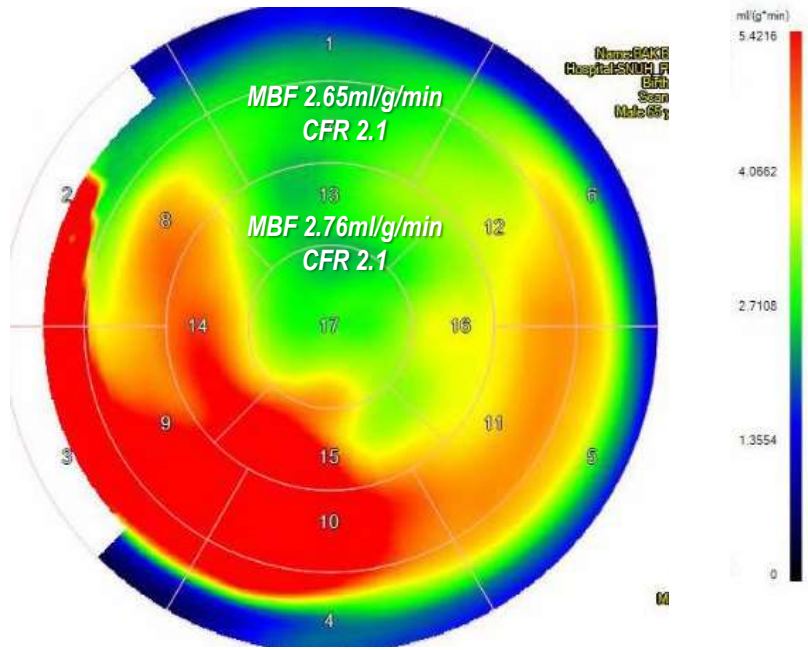
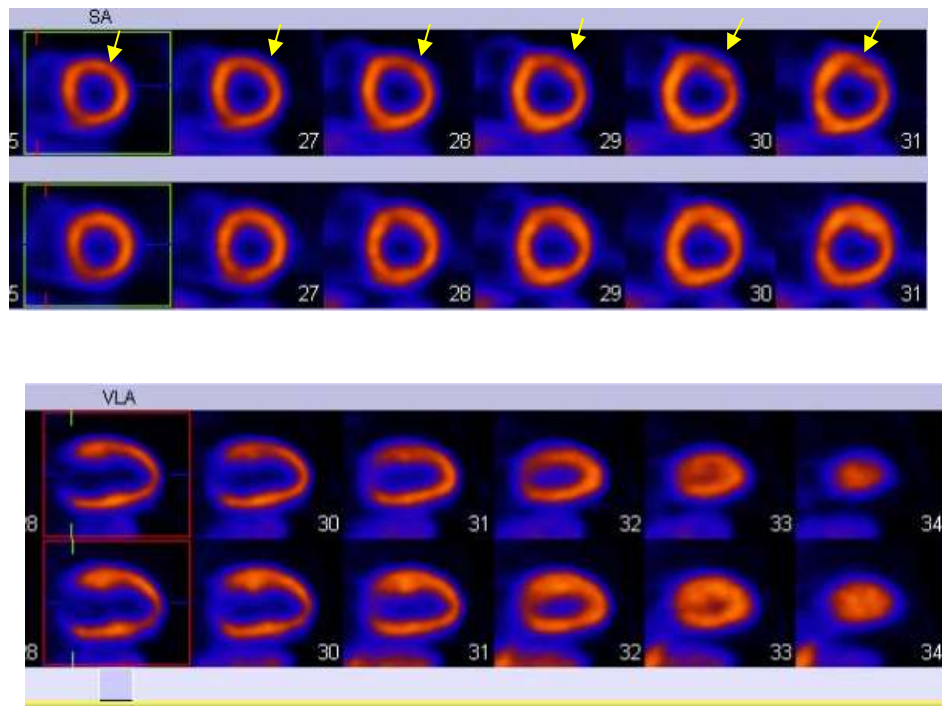


Unexpected Event

- While trying SB ballooning and KBI, patient complained sudden vertigo and severe headache
- Cannot tolerate... the procedure was finished...
- Brain MRI :
Newly appeared focal cortical infarct, around left central sulcus.
→ Embolic infarction

Fully recovered and asymptomatic.....

¹³N-Ammonia PET



Moderate perfusion decrease in the mid-basal anterior and basal anterolateral wall

Integrated use of FFR and IVUS in non-LM bifurcation lesions

- Both FFR and IVUS can provide physiologic and anatomical insight during bifurcation PCI.
- Adequate knowledge on coronary anatomy/physiology and pitfalls of IVUS/FFR is essential to use IVUS/FFR properly in complex bifurcation lesion and in complex bifurcation PCI.

“Perfect is the enemy of good”



Voltaire, *Dictionnaire philosophique* in 1770