

How to Use in PCI IVUS & FFR



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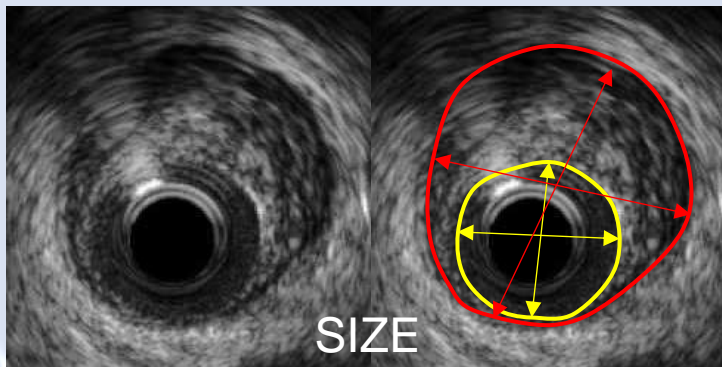


What is IVUS

❖ Plaque Type



❖ Lesion Evaluation

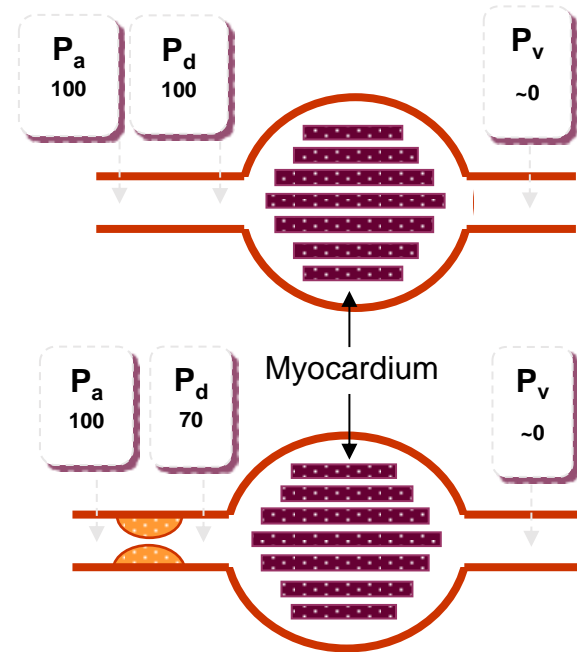
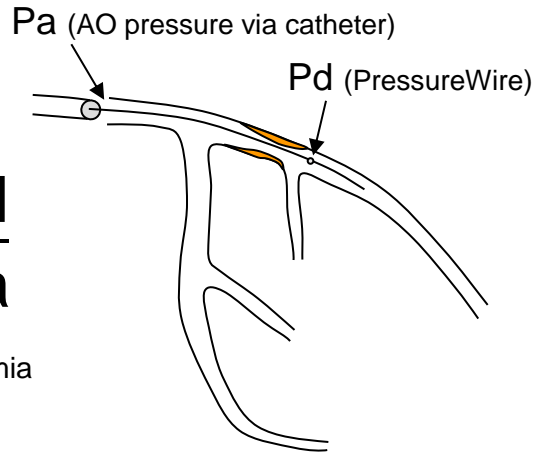




What is FFR

$$FFR = \frac{P_d}{P_a}$$

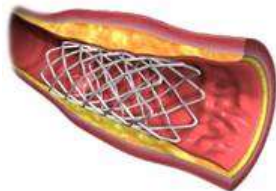
At maximum hyperemia



PCI / revascularization

Optimal medical therapy

0



0.75

0.80

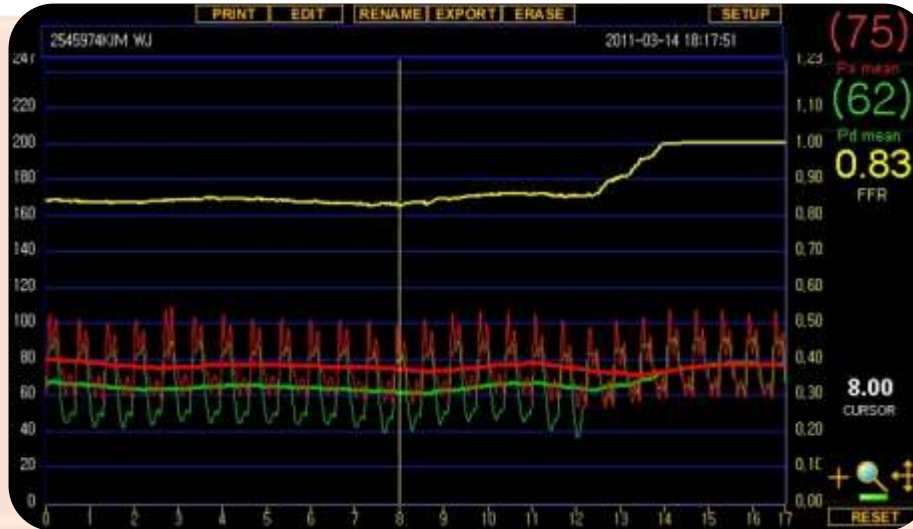
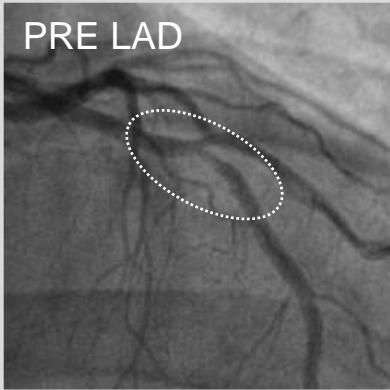


1.0

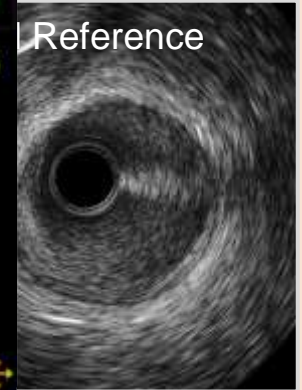
What is FFR

CASE I

PRE LAD

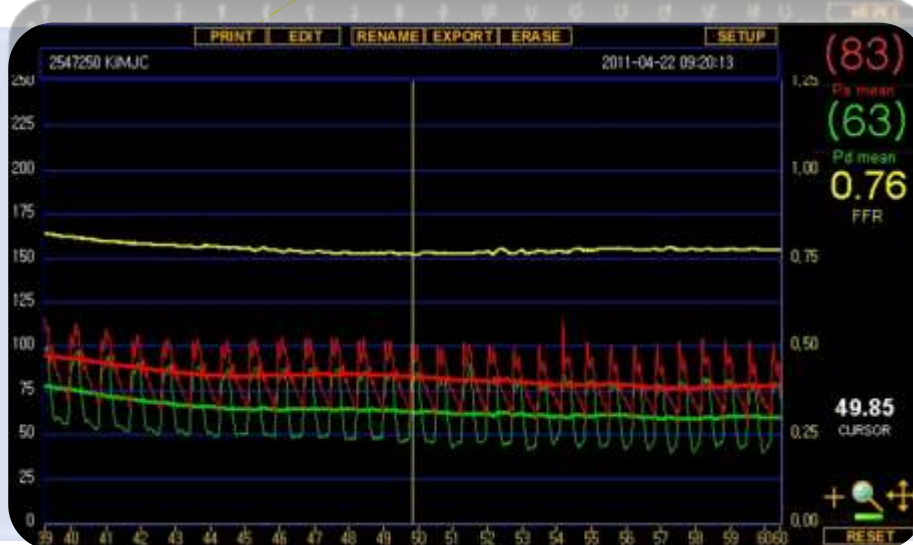
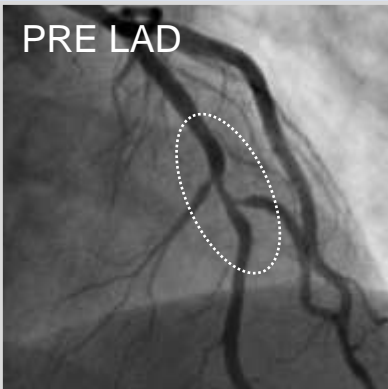


Reference

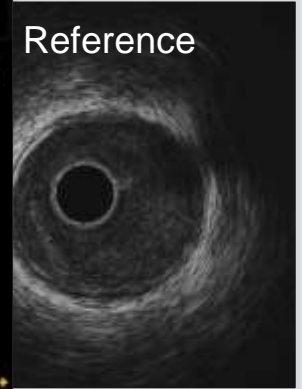


CASE II

PRE LAD



Reference





How to integrate IVUS & FFR

01

Physiology-guided decision making for whether treat or not, and where to treat

02

Imaging-guided decision making for how to treat



Target lesion selection, Device selection, Stent selection, Procedure selection, etc

03

Imaging (and/or Physiology)-guided post procedural evaluation



Result assessment, Additional procedure decision, Prognosis expectation, etc

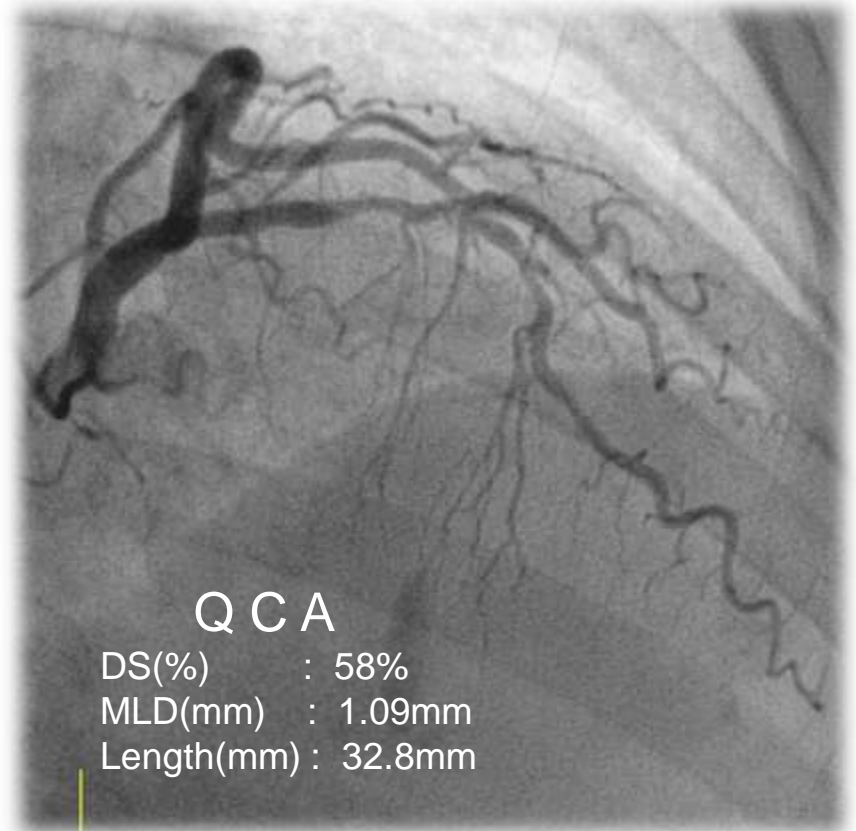
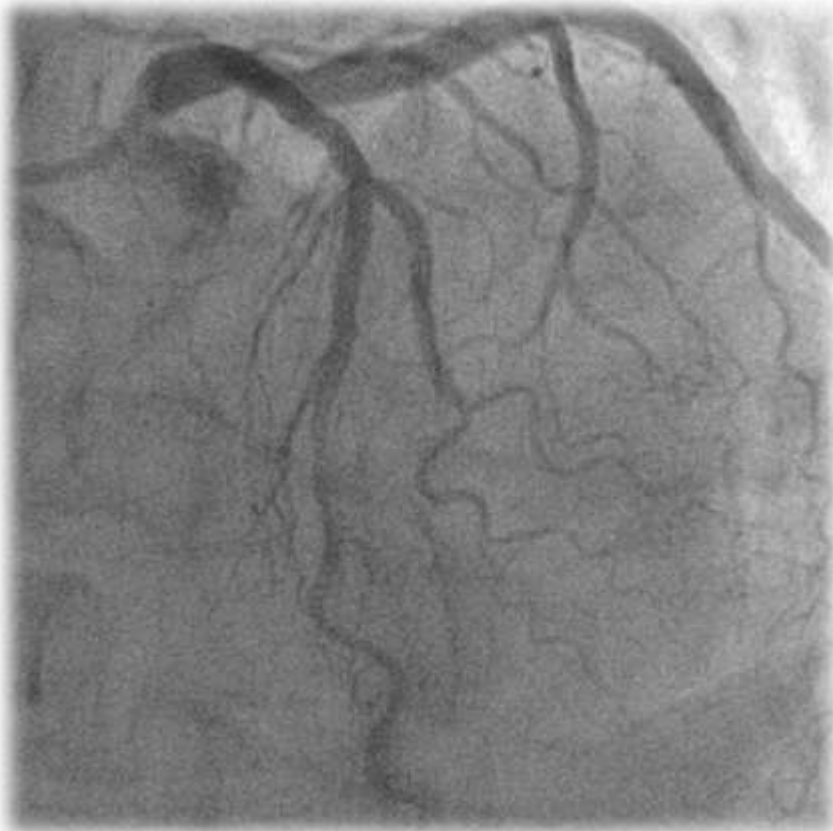


CASE I

71/Female, Stable Angina

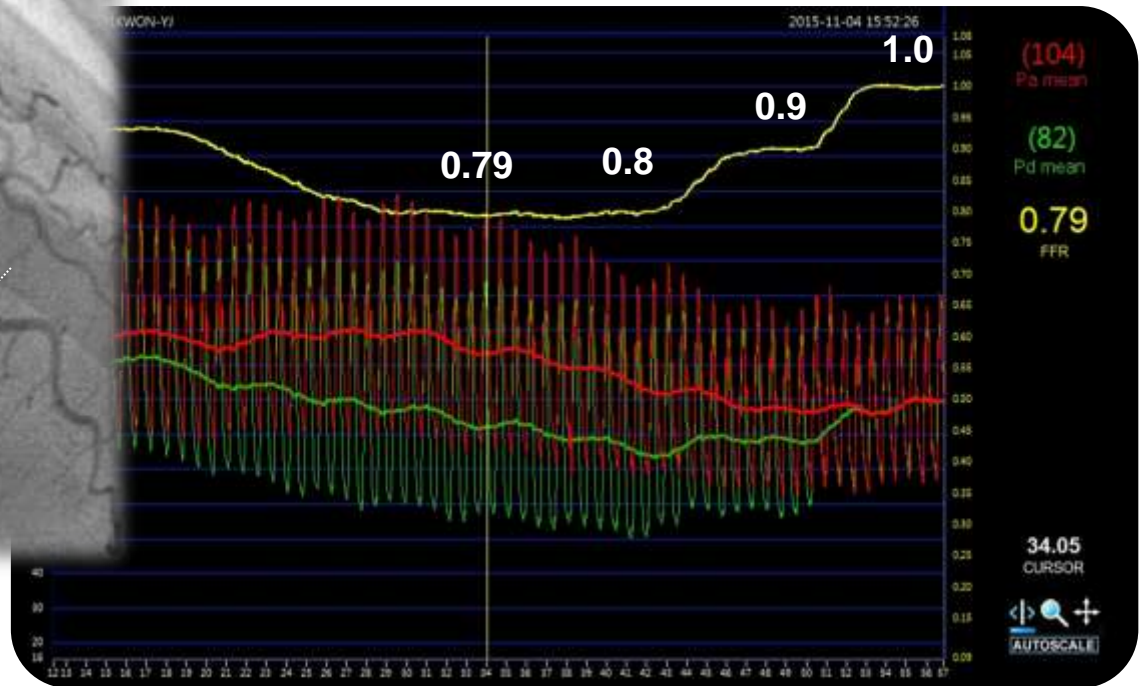
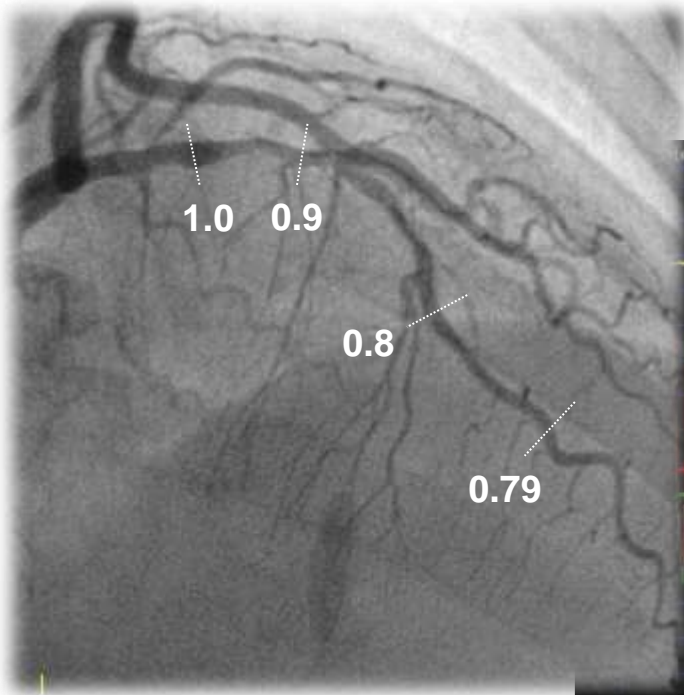
CVRF : HTN(+), Smoking(-), Alcohol(-)

TTE : EF 65%, RWMA(-)





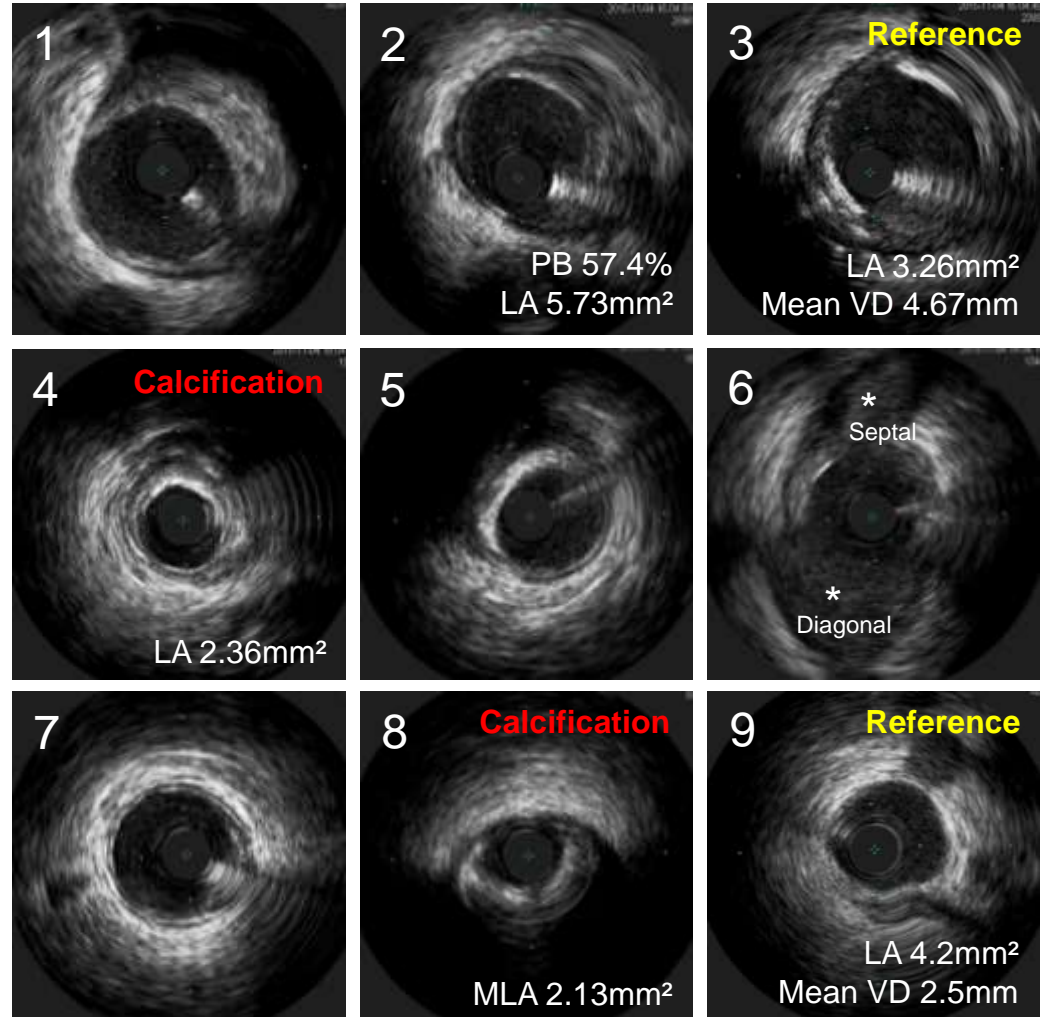
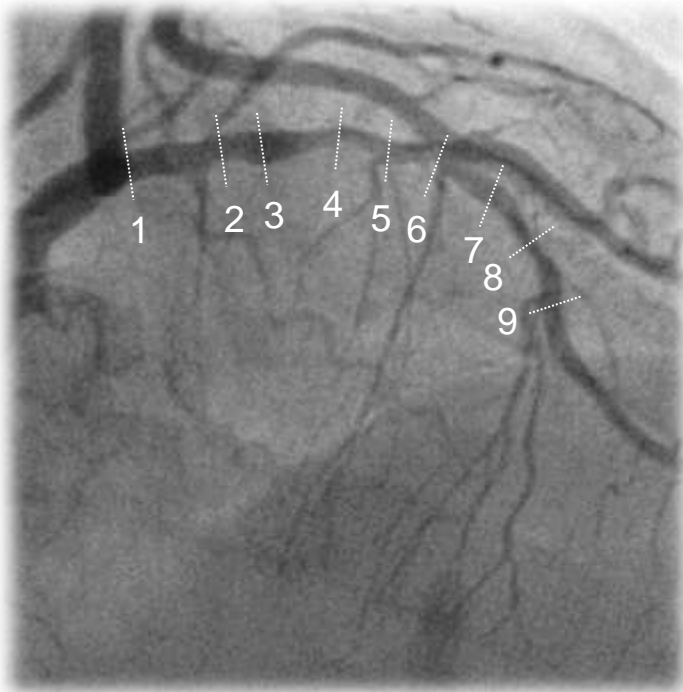
LAD Evaluation by FFR





LAD Evaluation by IVUS

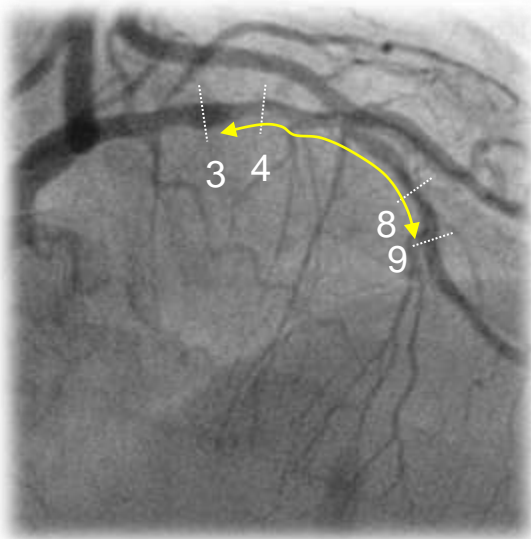
← Proximal



Distal →



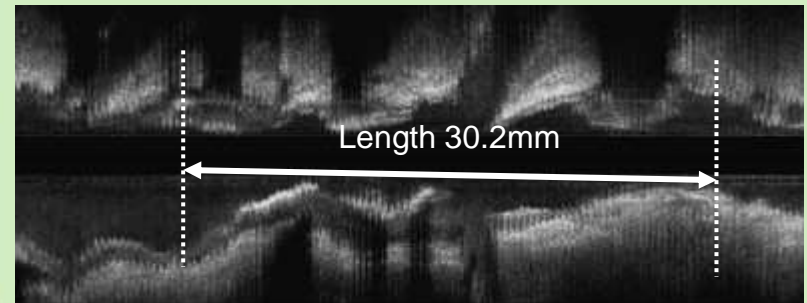
LAD Evaluation by IVUS



❖ Lesion Type - Calcified

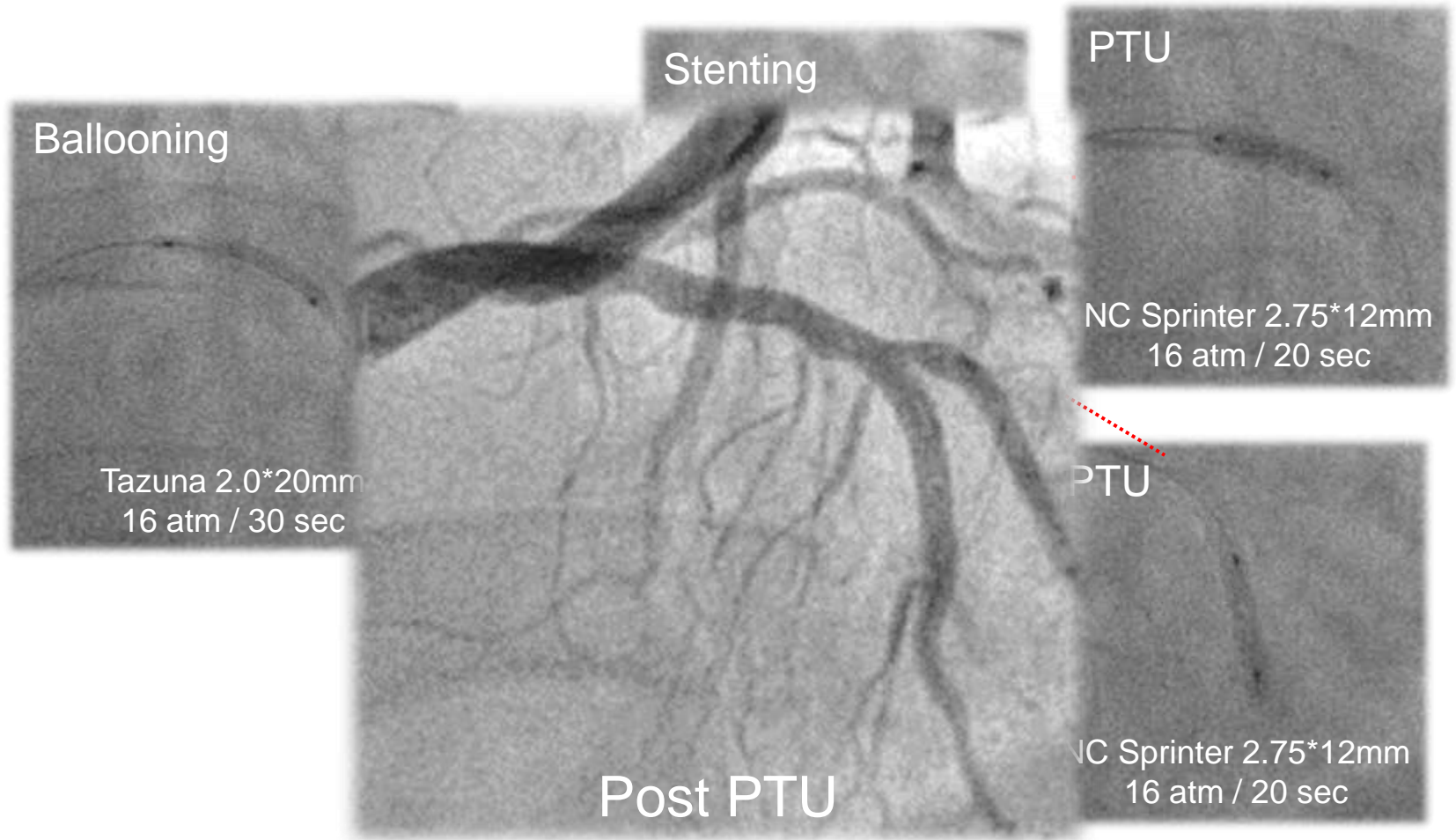
❖ Reference Size

❖ Lesion Length

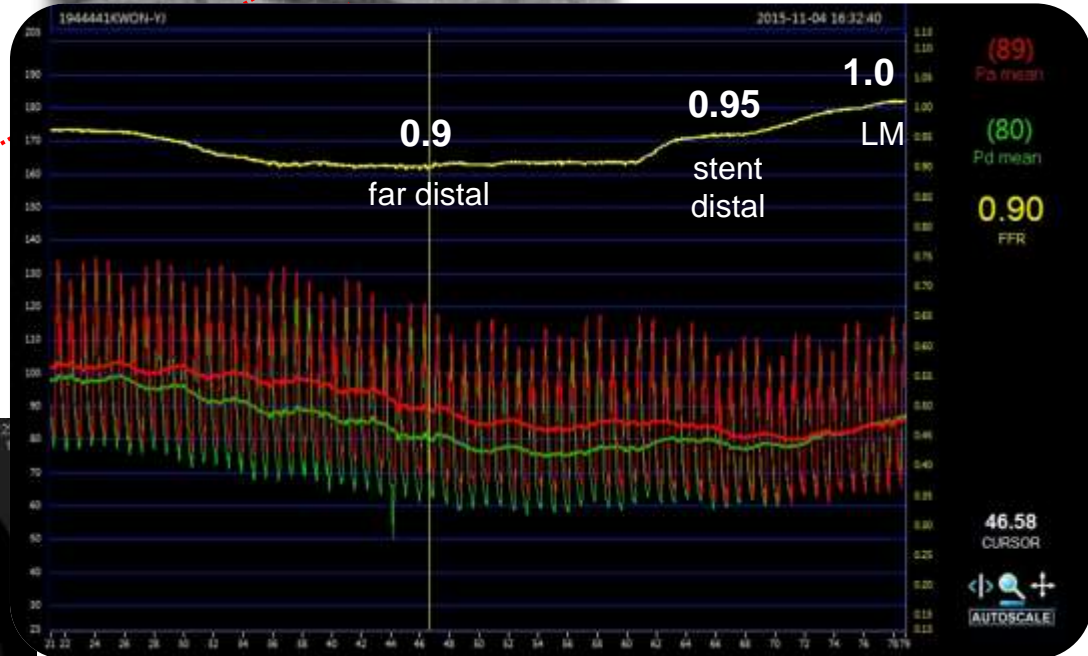
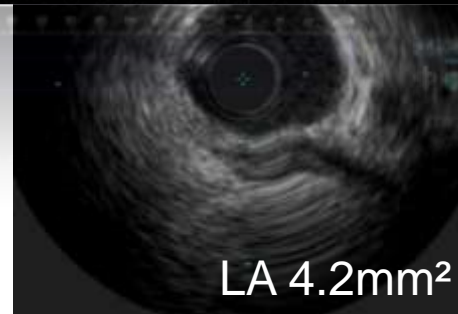
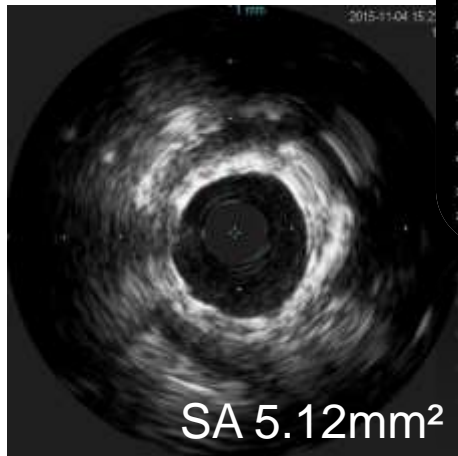
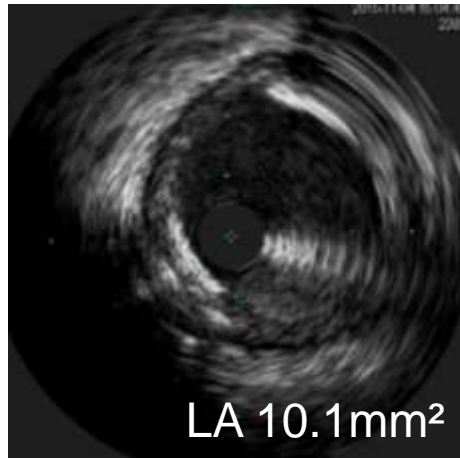




LAD Intervention



Post PCI Evaluate by IVUS & FFR



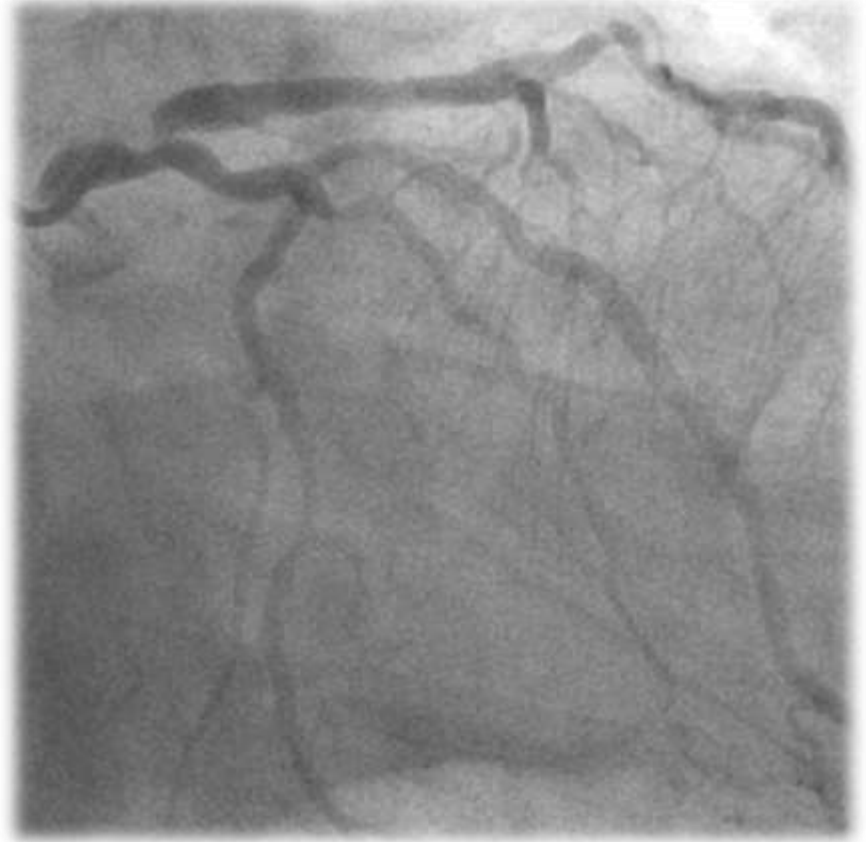
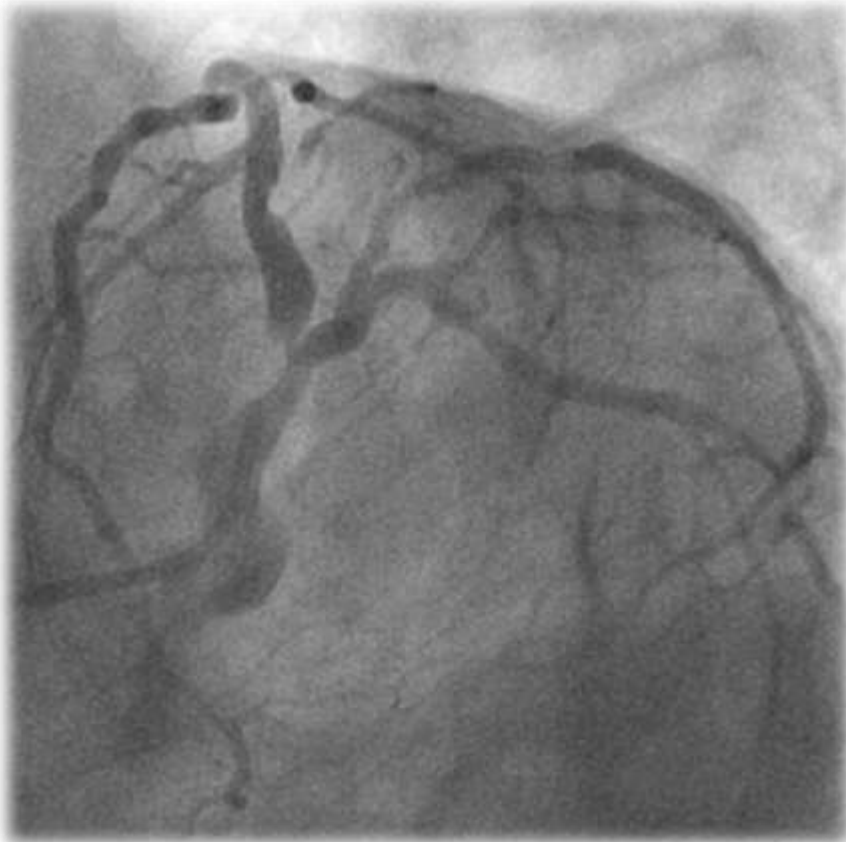


CASE II

62/Male, Angina for 1 month

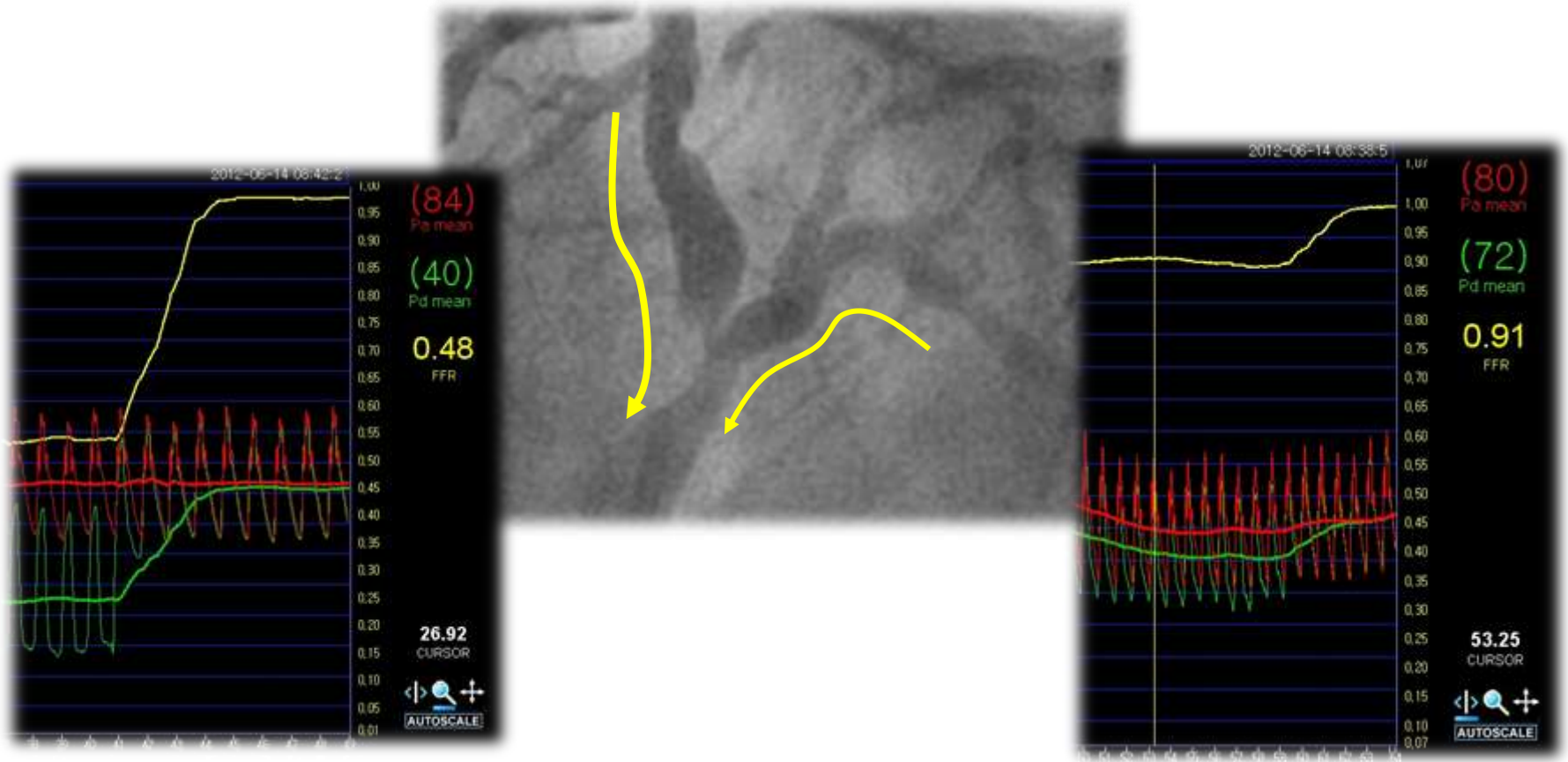
CVRF: HTN, Dyslipidemia, Smoking

TMT: ST depression in multi-leads



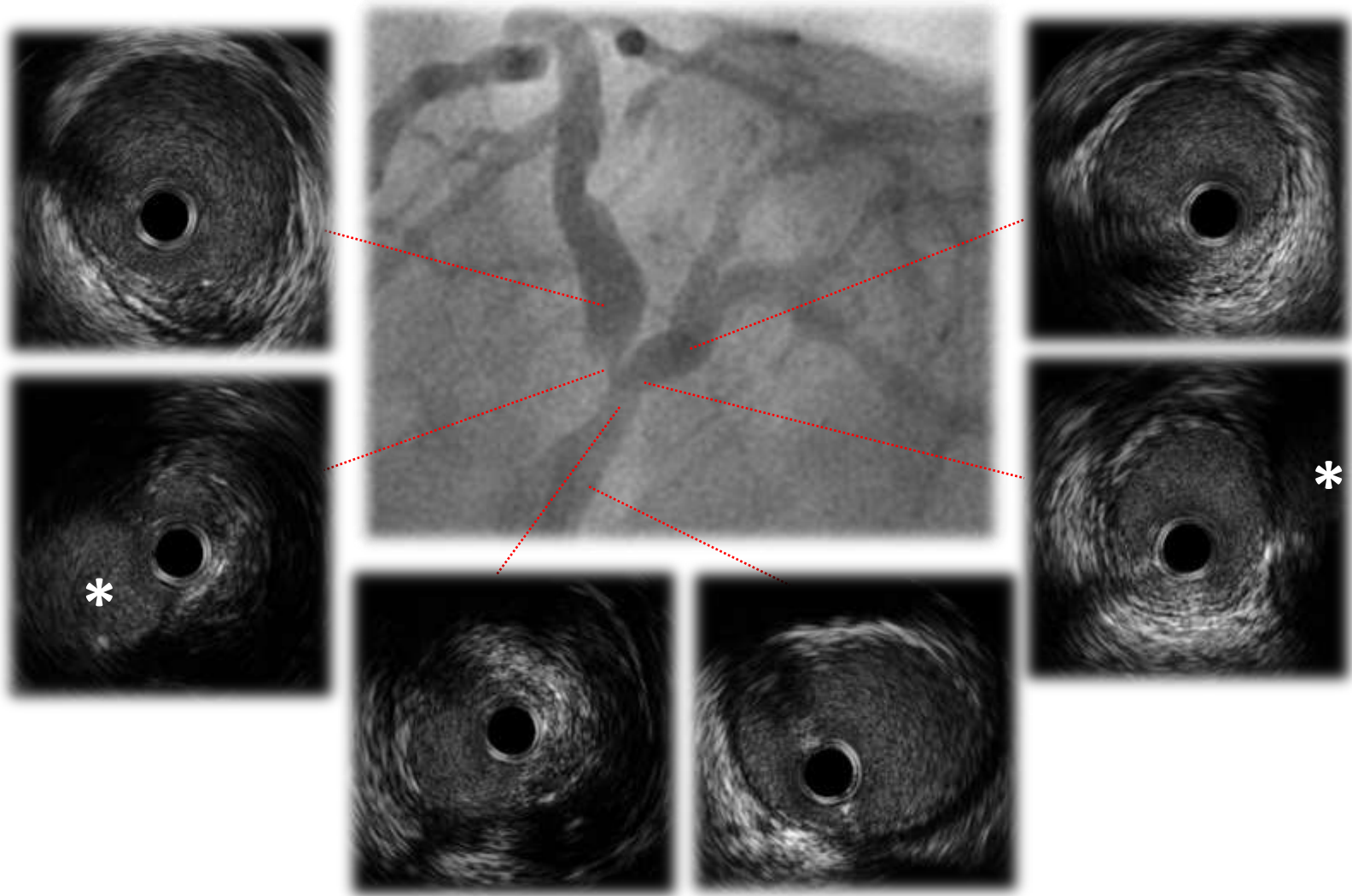


How to Evaluate LM bifurcation



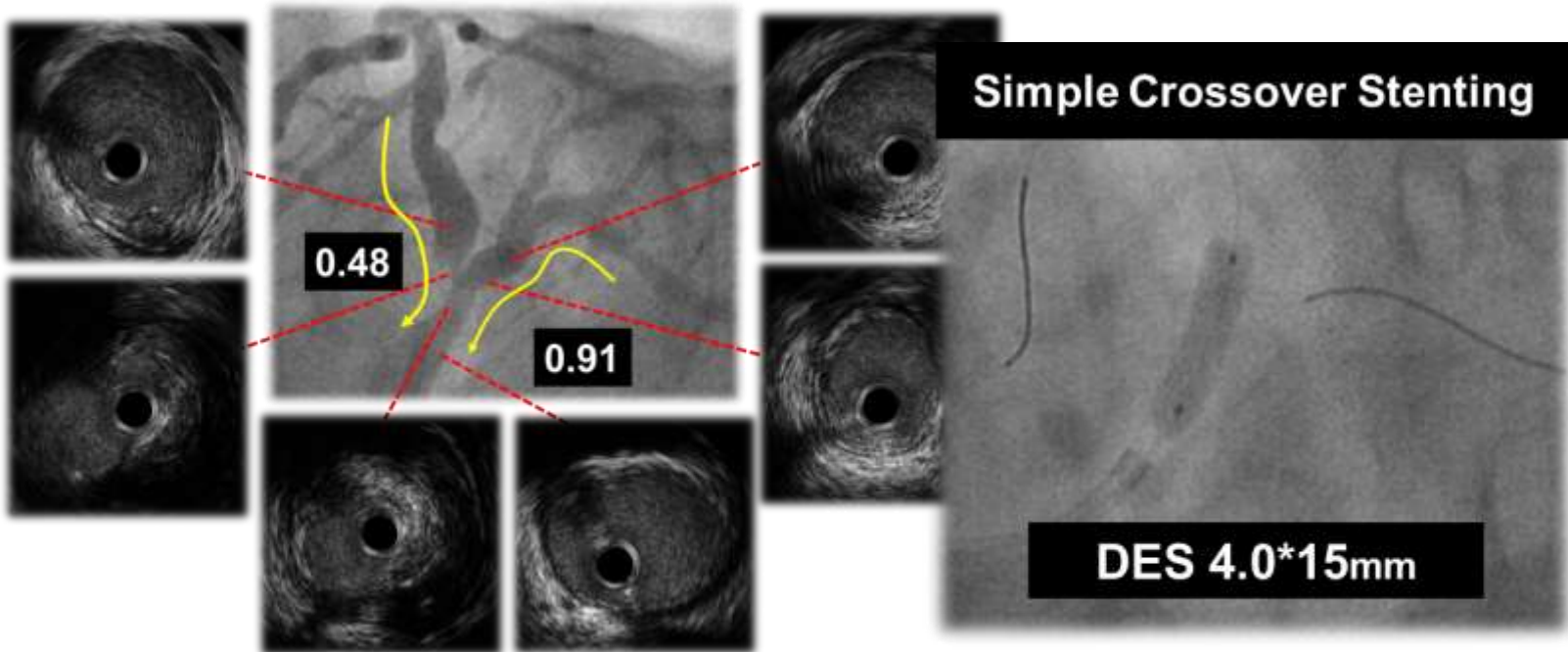


How to Evaluate LM bifurcation





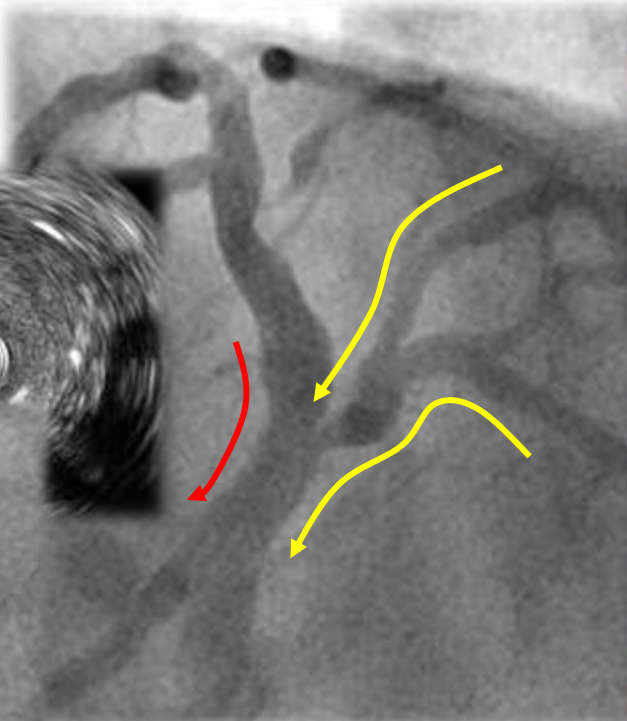
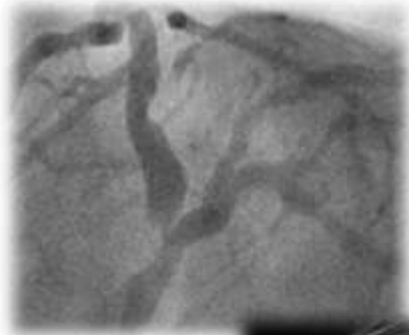
What is your Decision?



- Location of plaque, from distal LM to proximal LAD
- Plaque free in ostial LCX
- Large stent due to large reference vessel diameter
- Large plaque in distal LM
- Acute angle between LAD and LCX



How to Assess Jailed osLCX

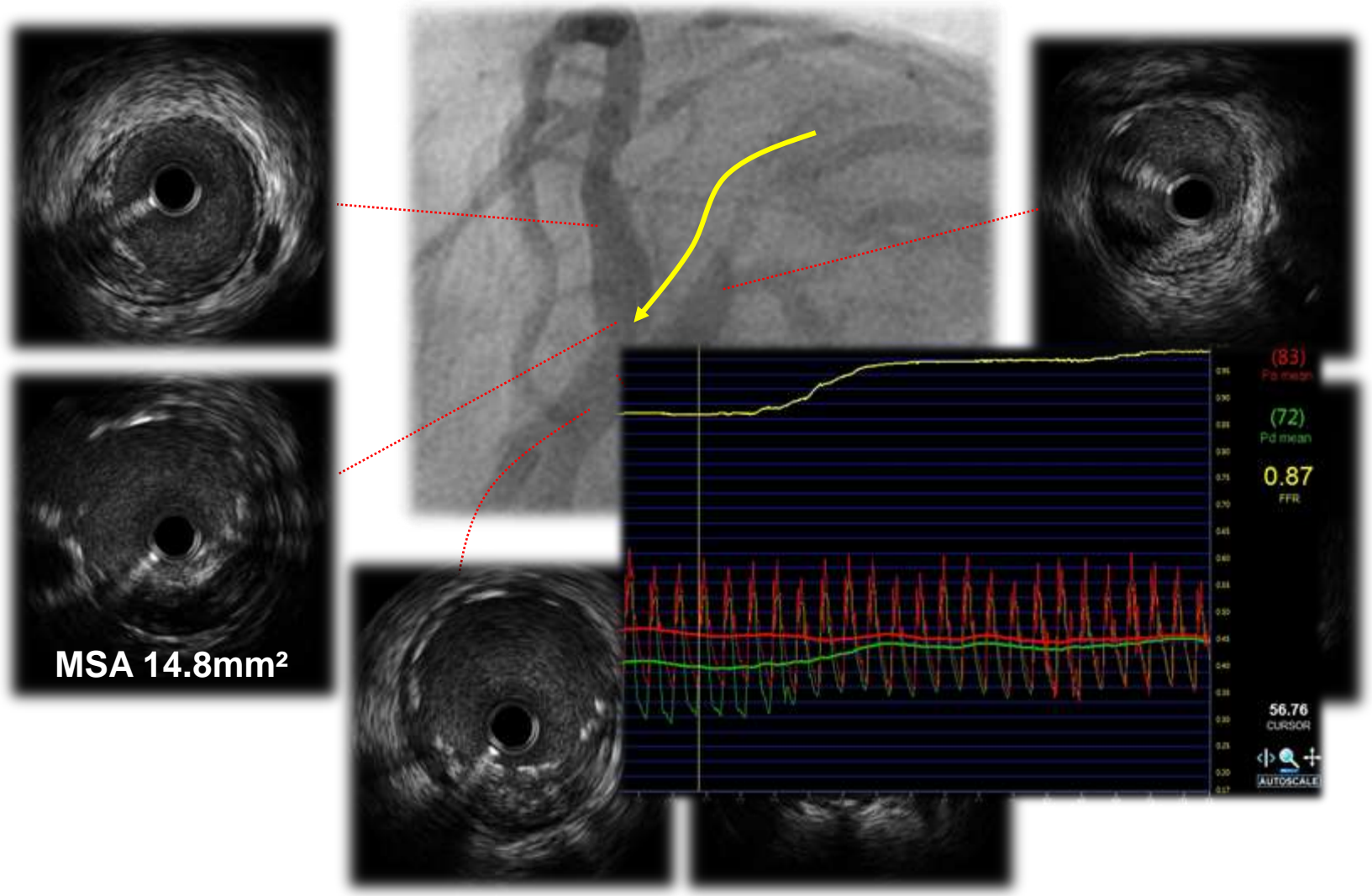


4.0x15mm &
2.5x20mm





Post PCI Evaluation by IVUS & FFR

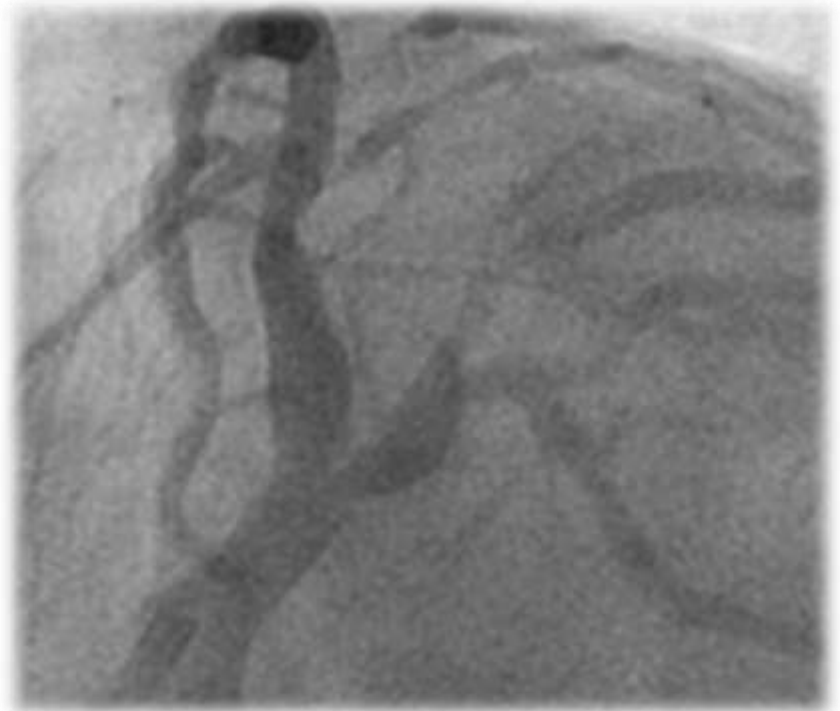
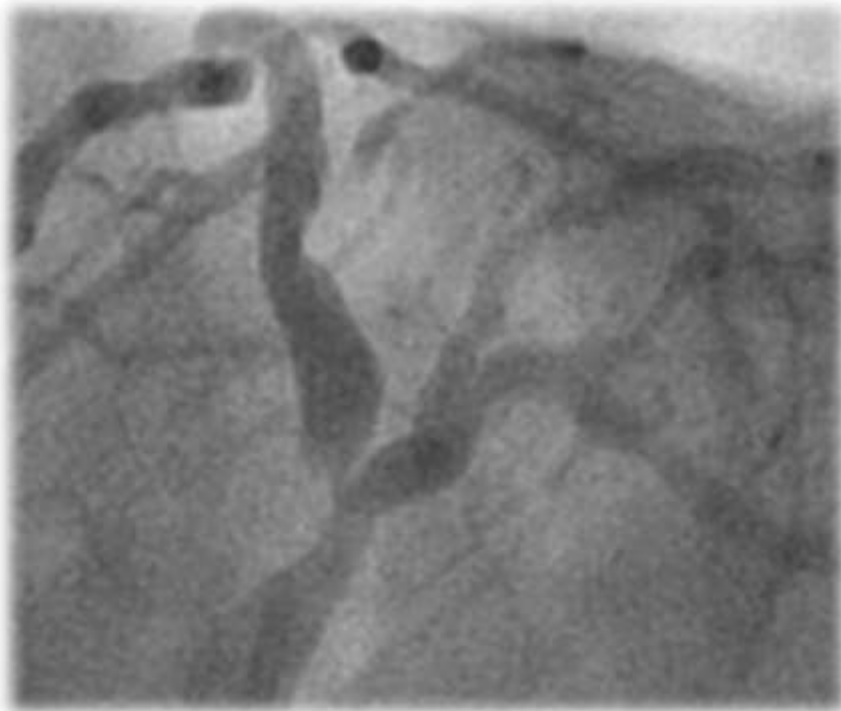


MSA 14.8mm²



LM bifurcation PCI with IVUS & FFR

Before, During, After



Follow-up TMT: (-), 12.1 METs



Take Home Message

Integration of Physiology & Imaging-guided decision making can help to find the best option before, during, and after PCI.