

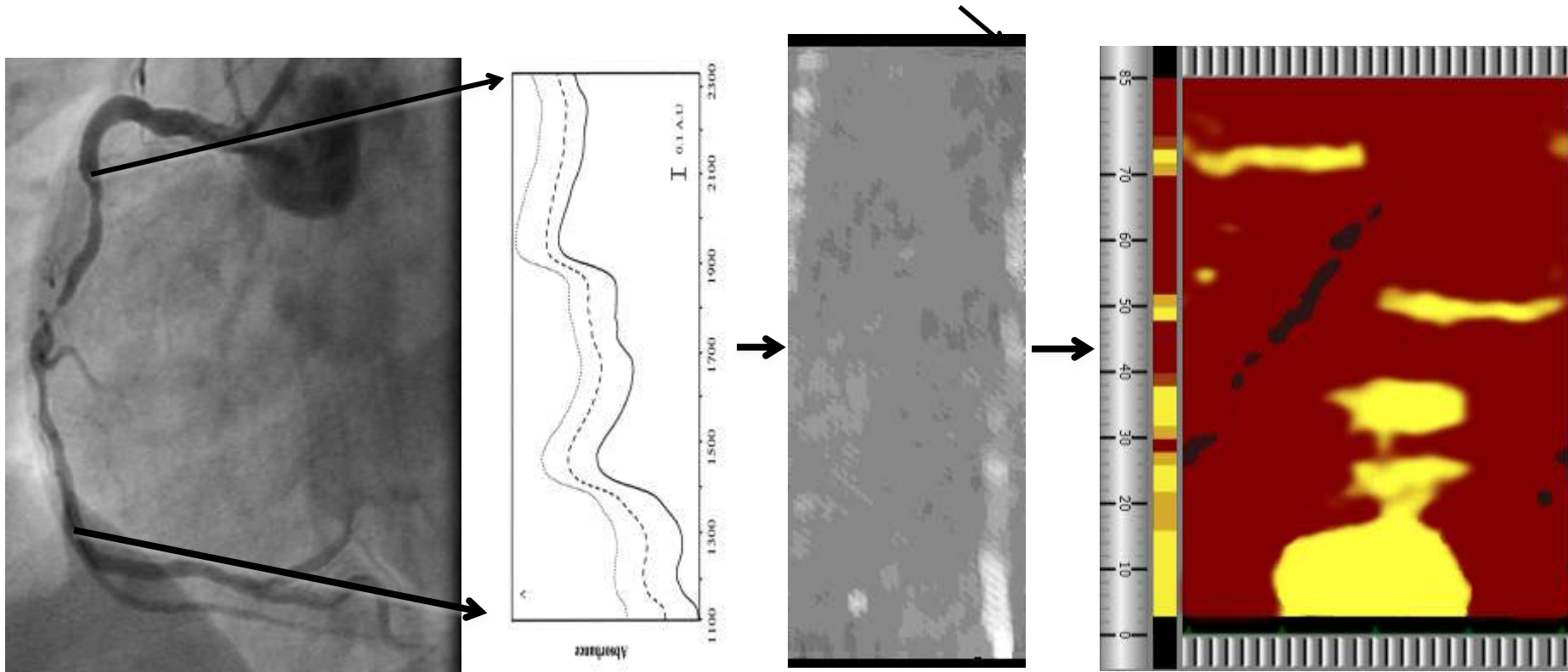
# NIRS after BVS implantation

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# NIRS Analysis of Coronary arteries

Raw Spectra of NIRS are decoded into the chemogram and presented as a colorful map



Probability of lipid deposition

■ < 0.57

■ 0.57 – 0.83

■ 0.84 – 0.97

■ > 0.97

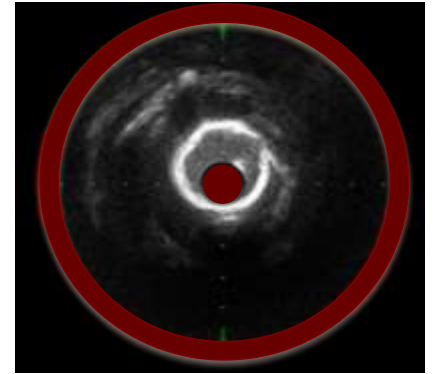
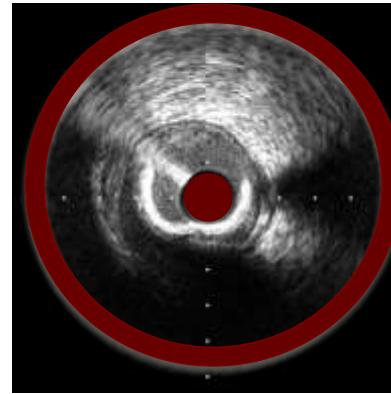
# Combined NIRS and IVUS imaging

## Plaque composition

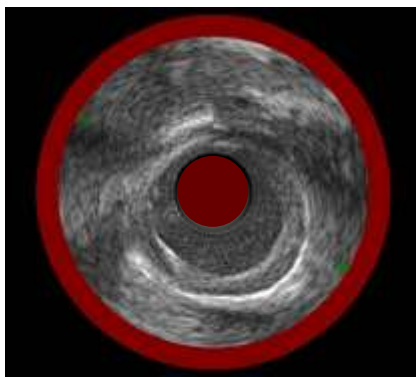
Healthy vessel



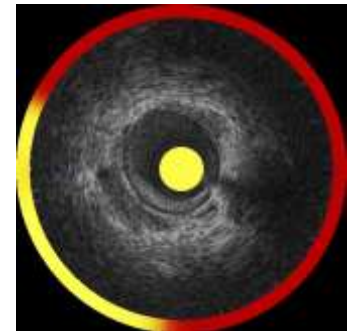
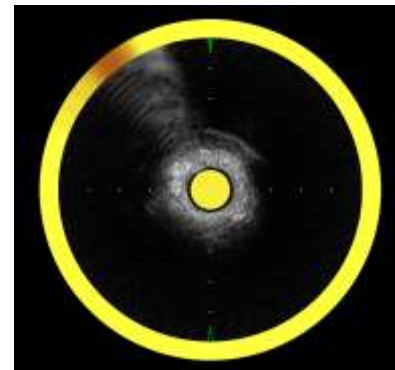
Calcified Lesion



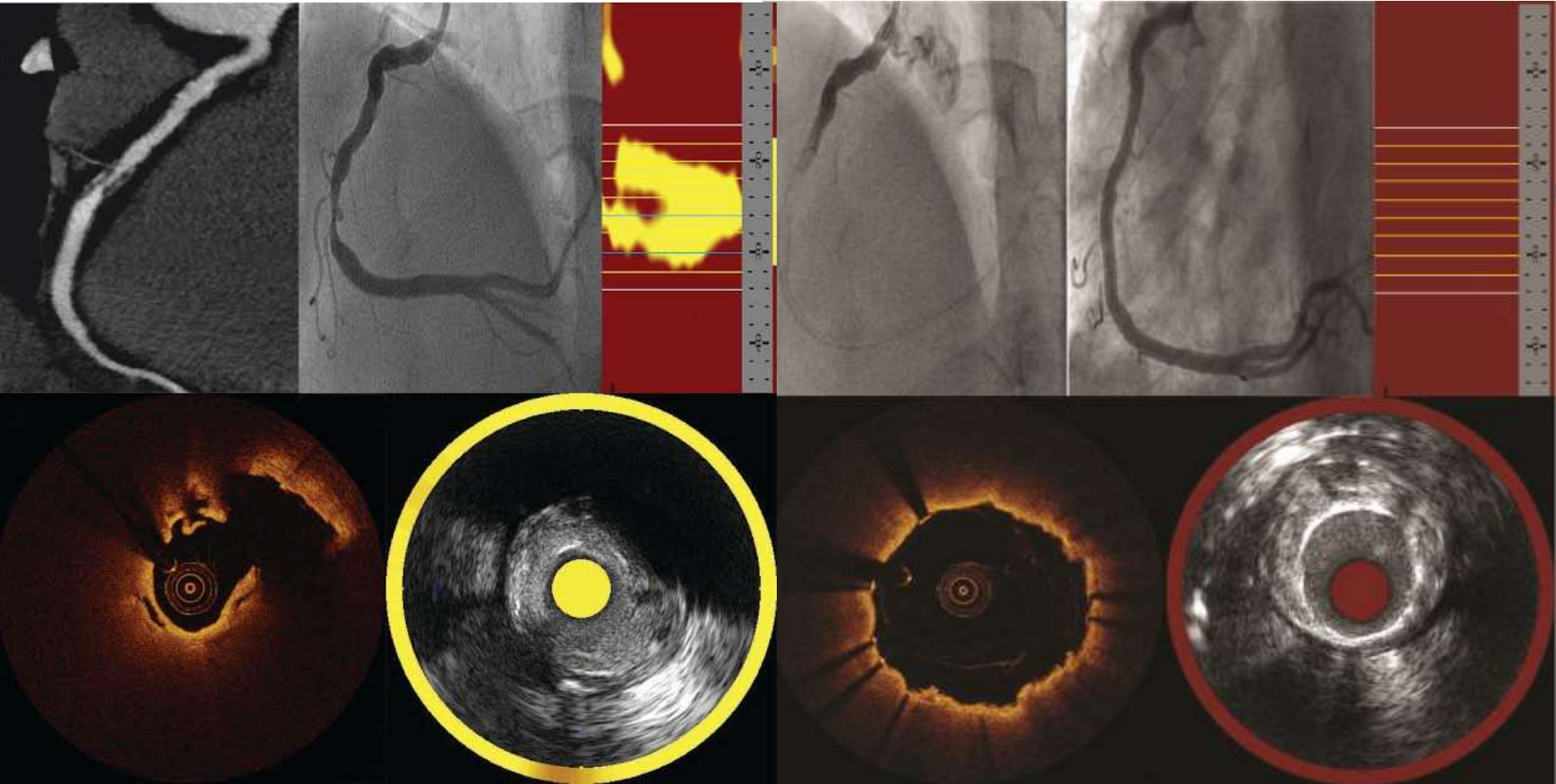
Fibrotic lesions



Lipid-rich lesions

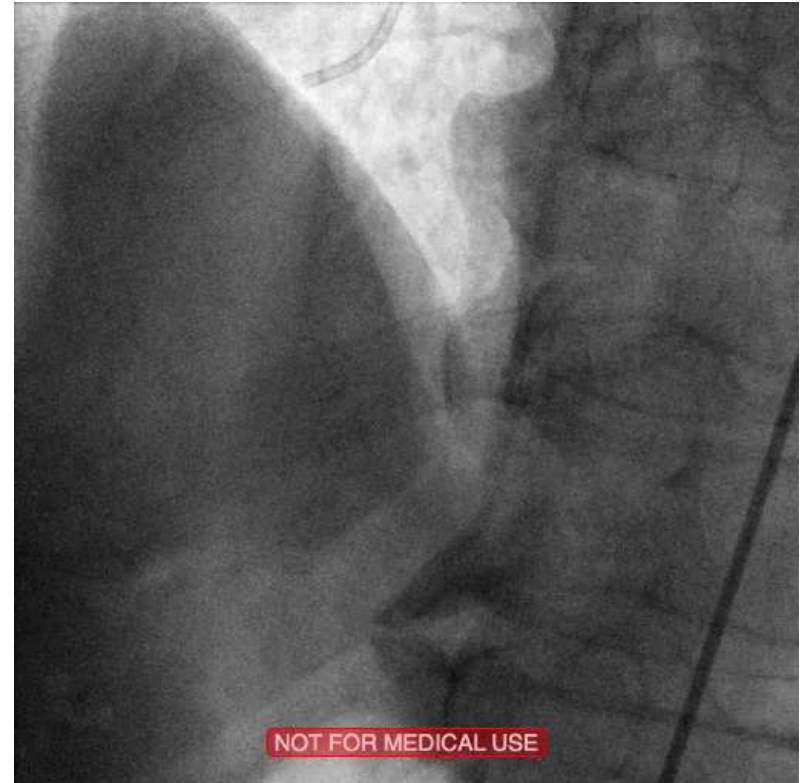
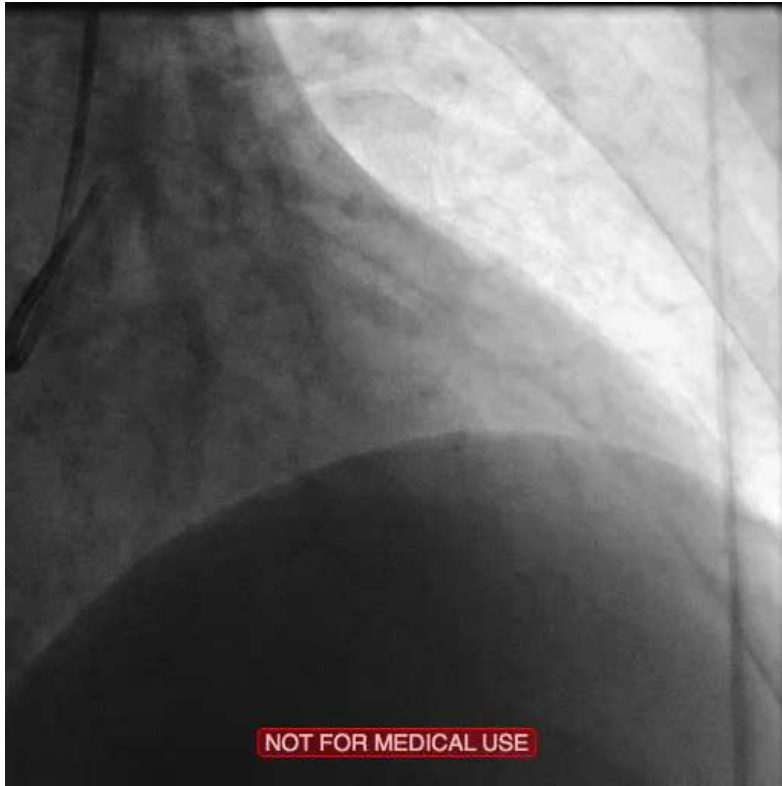


# Metallic DES



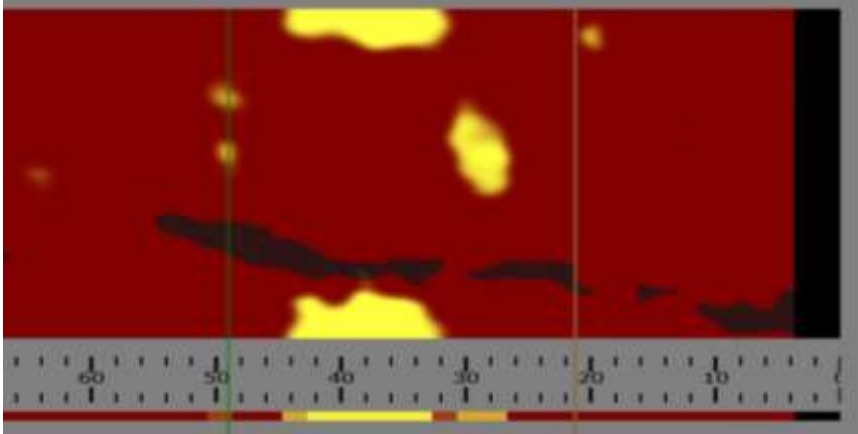
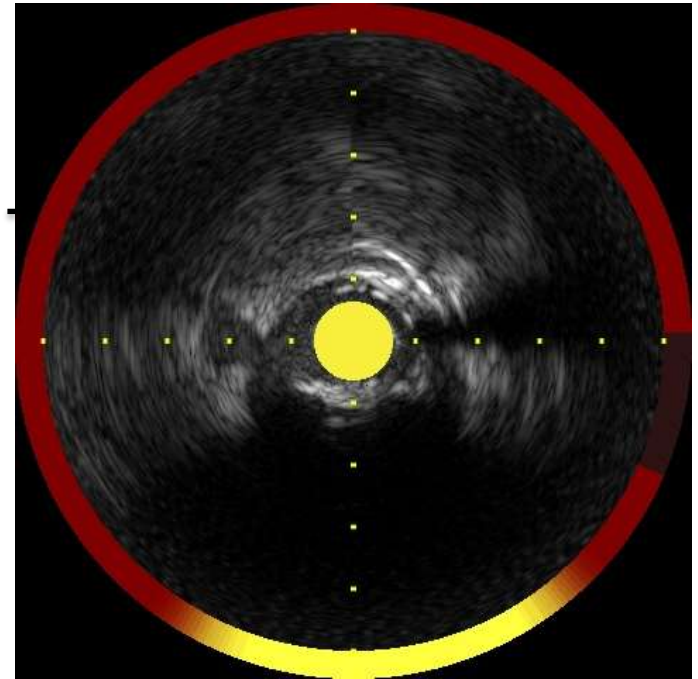
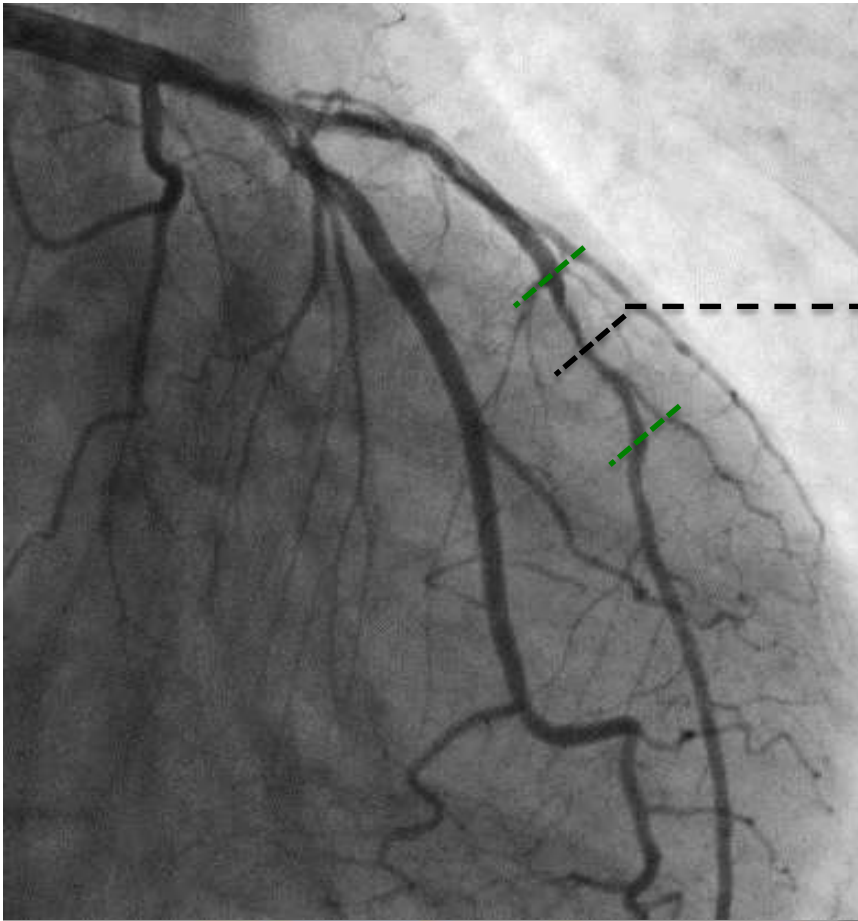
- The 65 years old male
- Stable coronary artery disease symptoms CCS II and a positive treadmill exercise test
- NSTEMI with PCI of LAD and BMS implantation 14 years ago
- Hypertension and hyperlipidemia
- Lab: Hb=15.7 g/dl , WBC= $6.28 \times 10^3$  /ul Platelets= $206 \times 10^3$ /ul, Creatinine=0,93 mg/dl, Total Cholesterol=162 mg/dl, HDL=47 mg/dl, LDL=96mg/dl and TG=95mg/dl.
- Echocardiography: LVEF=55%, no valvular disease

# Coronary angiography

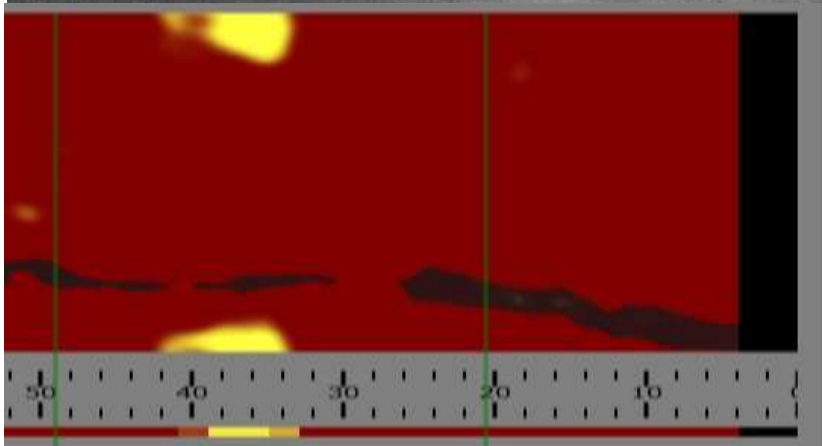
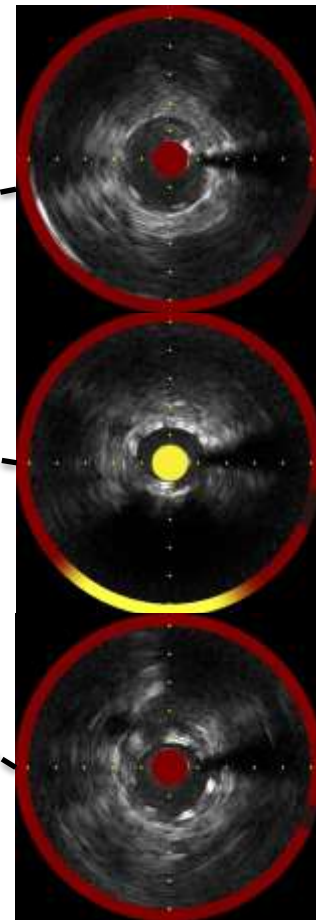
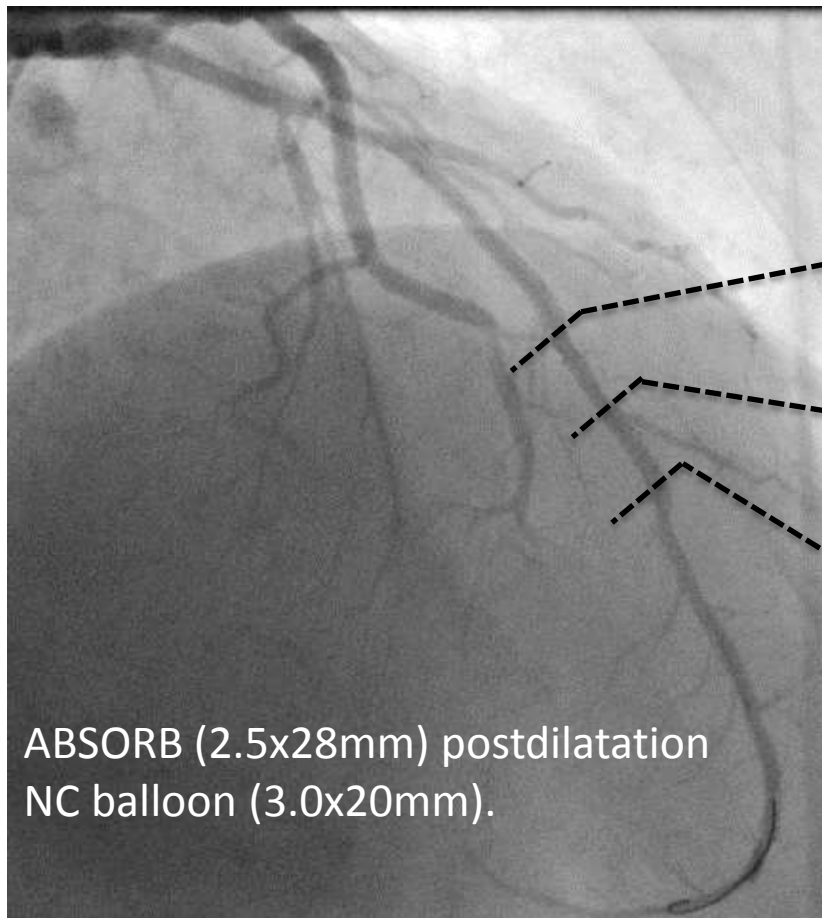


LAD:

- reference lumen diameter 2.3mm
- MLD: 0.9 mm
- lesion length: 22 mm

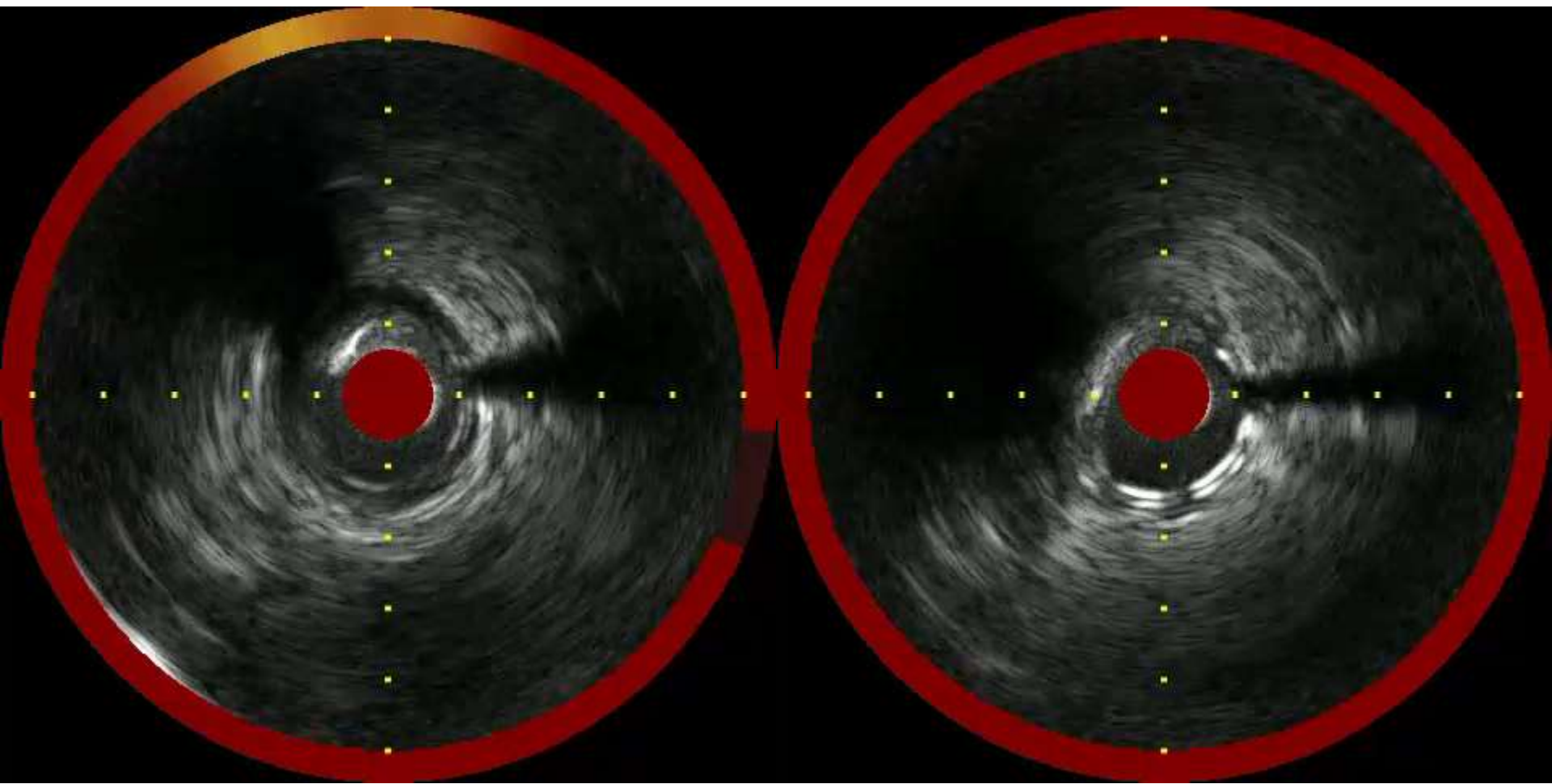


The NIRS-IVUS imaging of LAD lesion presented a lipid rich plaque with maximal LCBI in 4mm = 288, plaque burden = 72% and MLA = 3.1mm<sup>2</sup>.



Post intervention the in-stent MLD was 2.56mm<sup>2</sup>.  
The NIRS-IVUS presented well-expanded and appropriately apposed ABSORB with MLA 5.14 mm<sup>2</sup>.  
Lipid-rich plaque visible behind the polymeric struts with maximal LCBI per 4mm = 264.





# SUMMARY

- Coregistration of NIRS/IVUS identifies lipid-rich plaques
- Implantation of BVS allows visualization of redistributed lipid-rich plaque