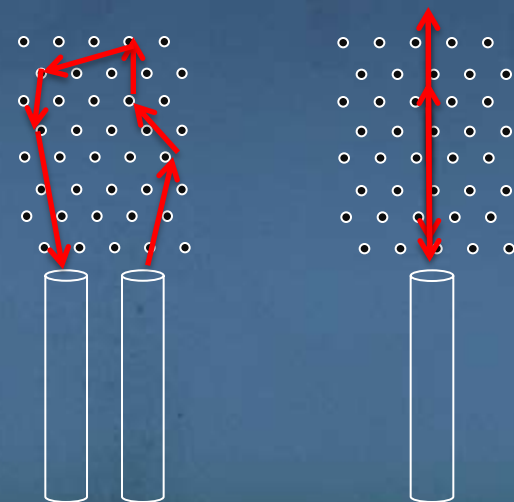
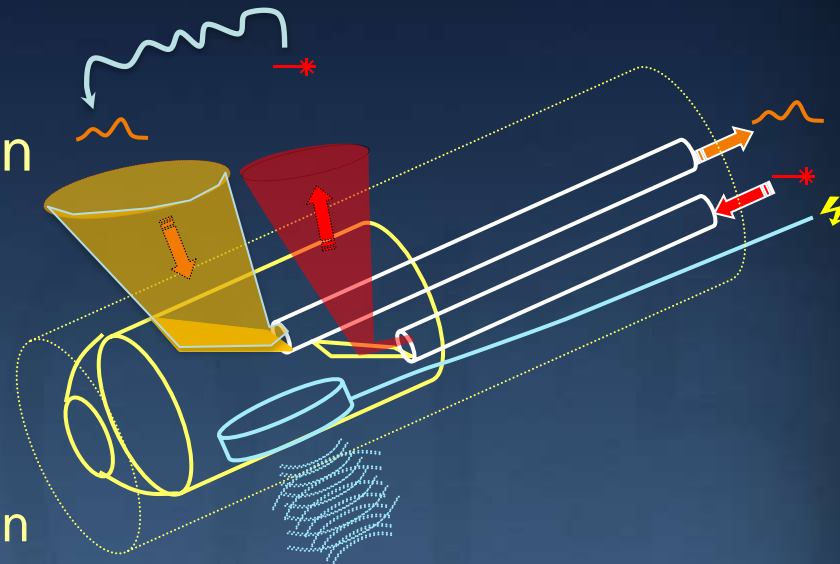


Near Infrared Spectroscopy (NIRS) Case Review

**Rt. Lim Jun Ho
Asan Medical Center**

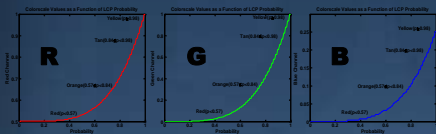
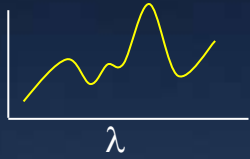
What is NIRS?

- TVC = T rue Vessel Characterization
- Intravascular Ultrasound and NIR Spectroscopy System
 - Ultrasound for structural imaging
 - NIR Spectroscopy for characterization
- Only Intravascular imaging system specifically indicated and proven to characterize plaque.
 - FDA cleared for lipid core plaque detection.



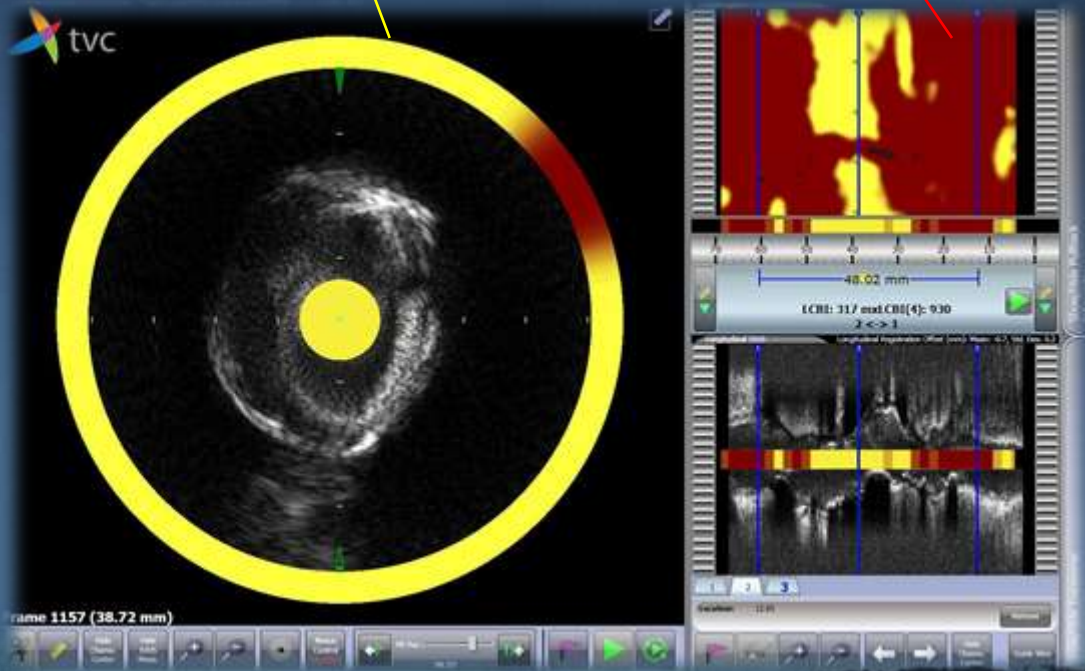
OCT

What is NIRS?

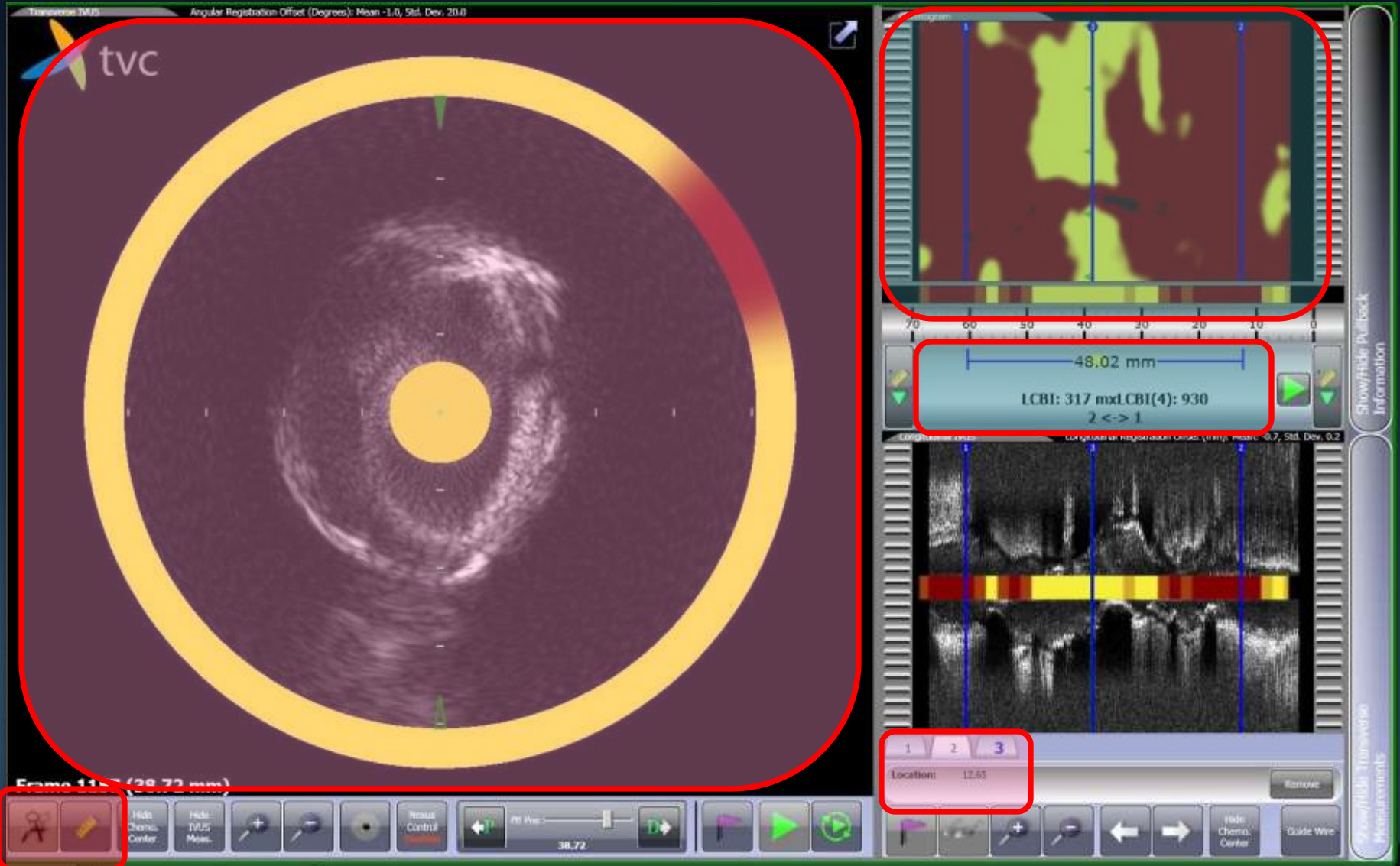


Yellow = Lipid Core

Red = Lipid pool
(Fibrotic plaque)



What is NIRS?



Case 1 Briefing

Brief Case Summary

Age : 69

Sex : Male

Etc. : HT / lipid

Stable Angina

Cardiac Echo : LAD 61

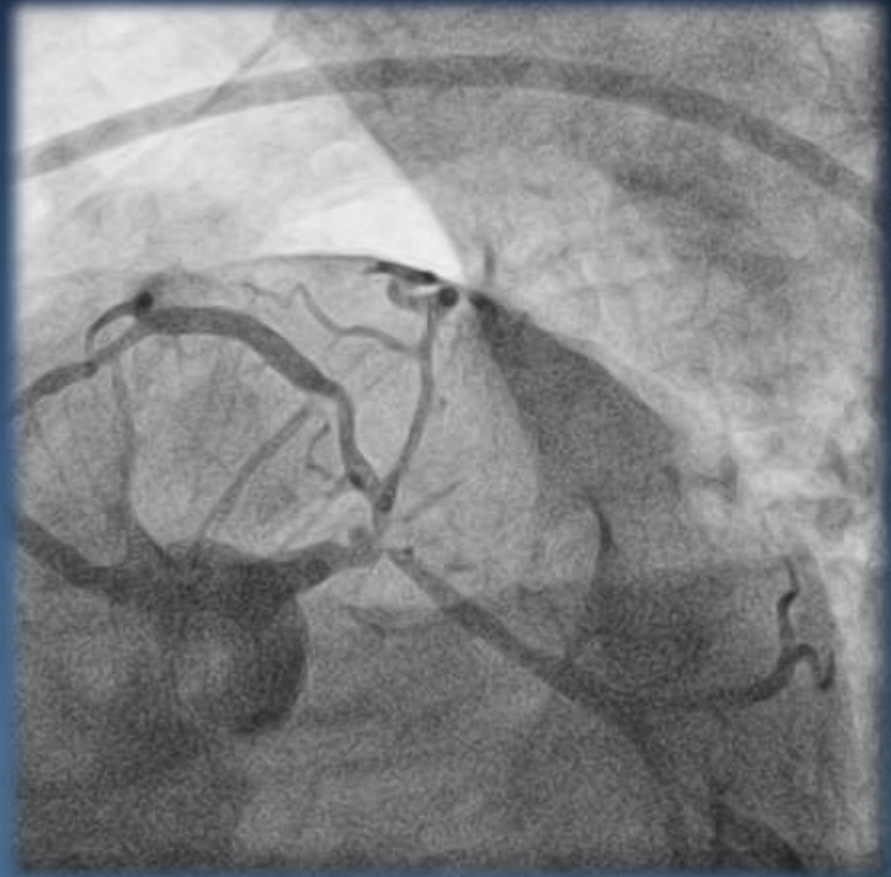
Thallium : None

Previous MI : Y

Previous PCI : None

Previous CABG : None

Angiography Review



FFR Image

0:03

FFR 0.69

Pd/Pa 0.87

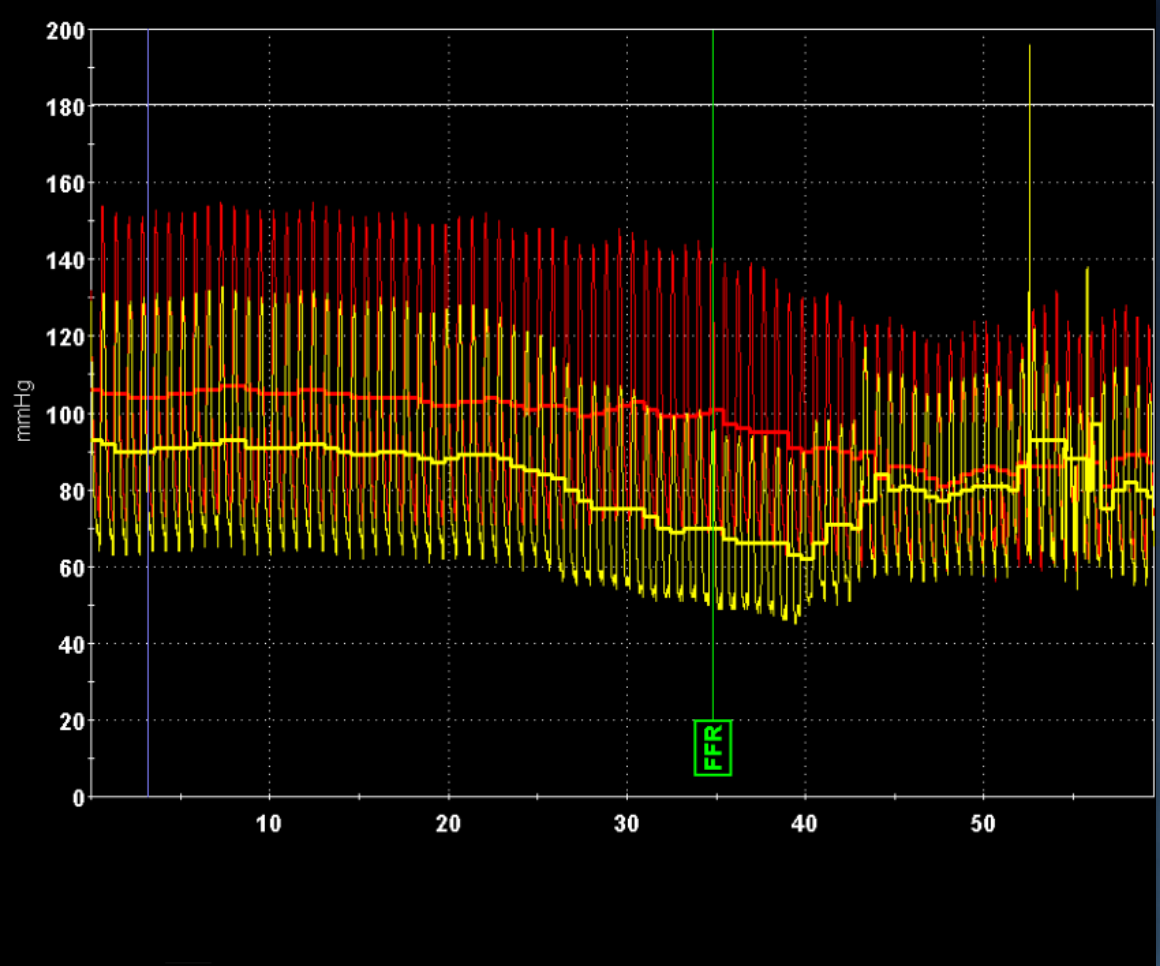
Pa:iPa 104: 88

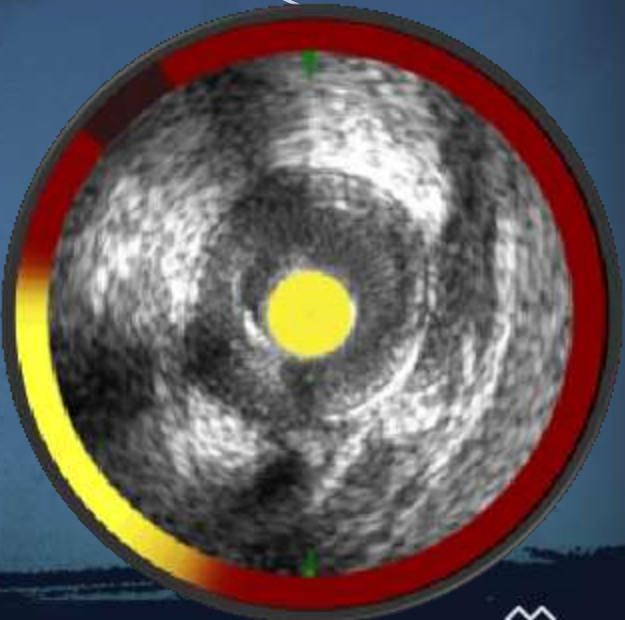
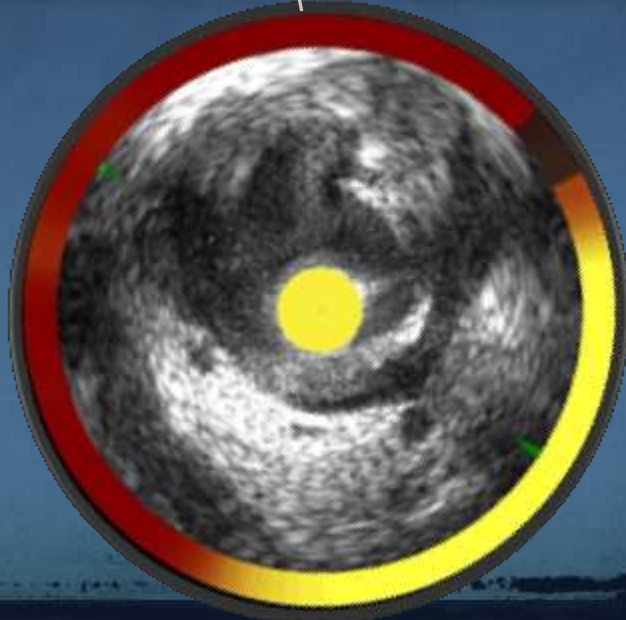
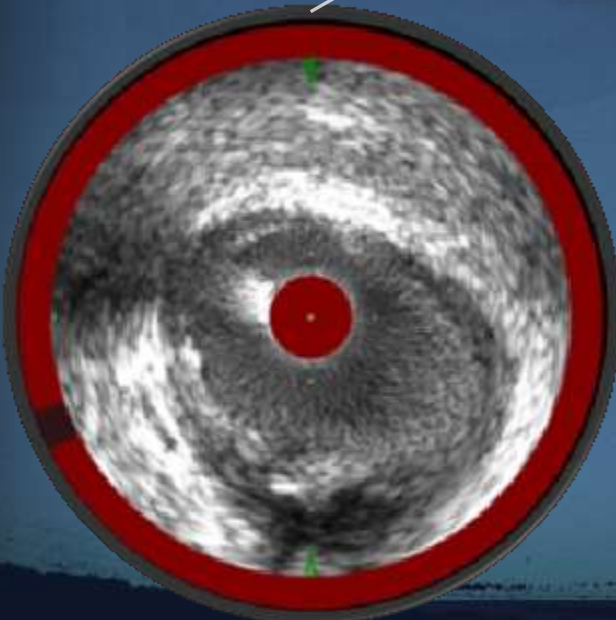
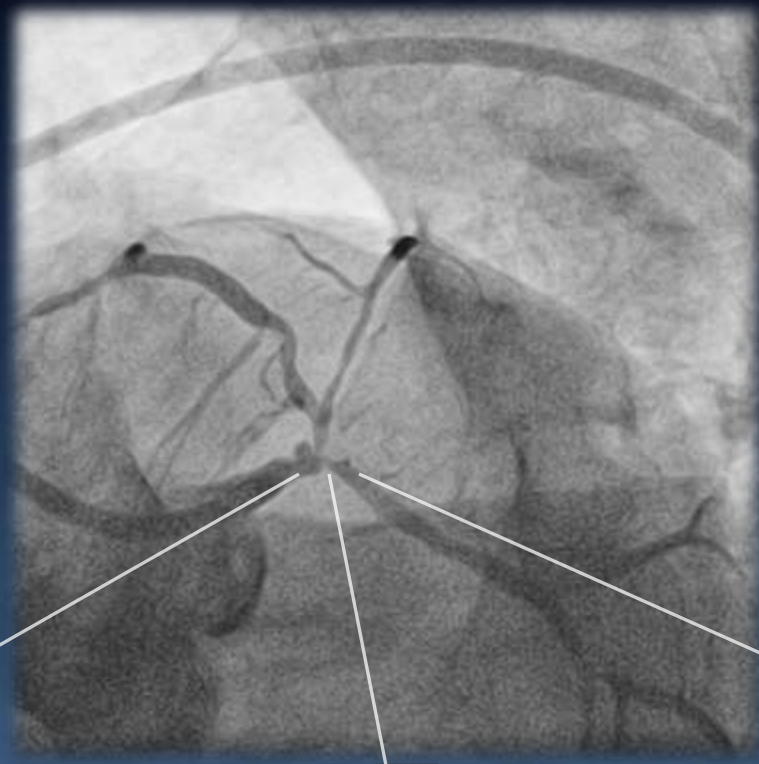
Pd:iPd 90: 75

Pa-Pd(p) 23

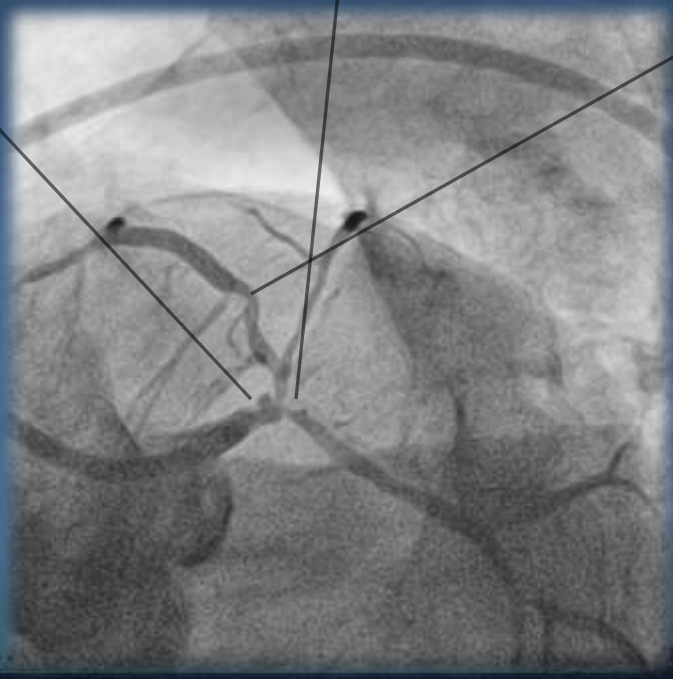
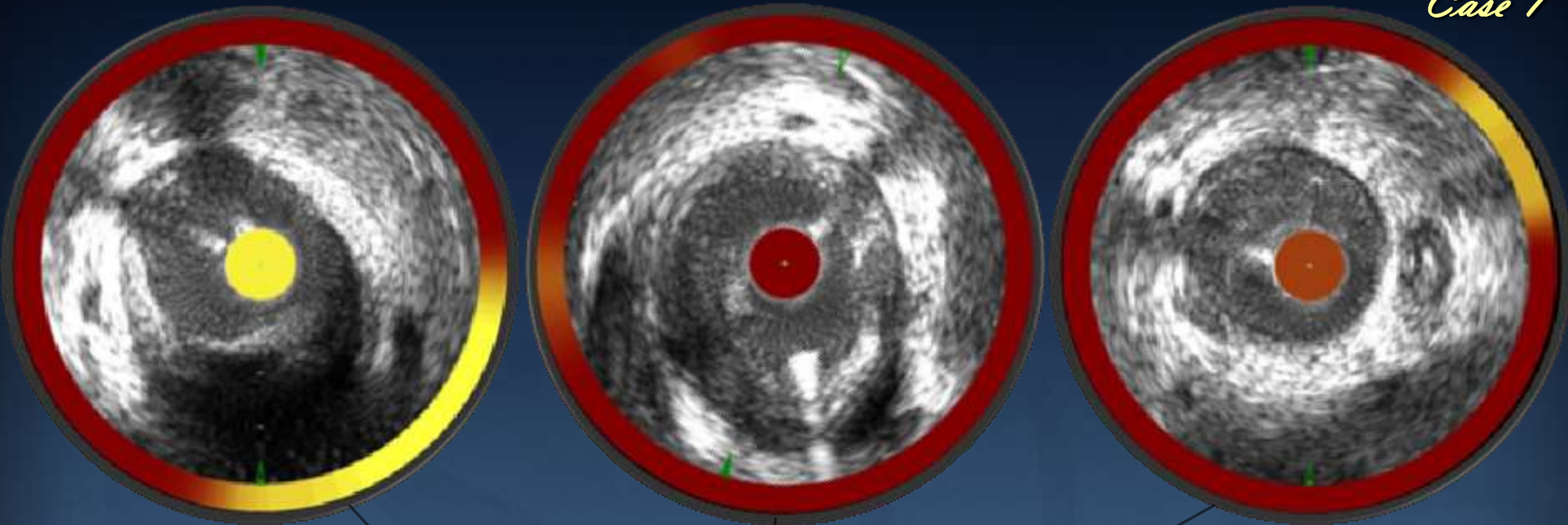
HR 0

List of Runs	iFR	FFR
08:52:06 AM		0.69
RCA		

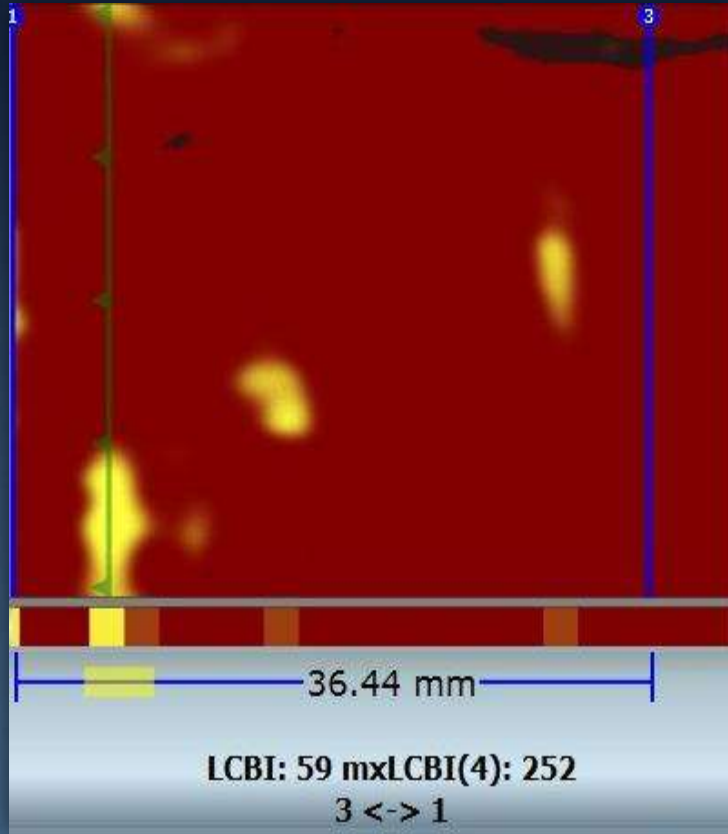




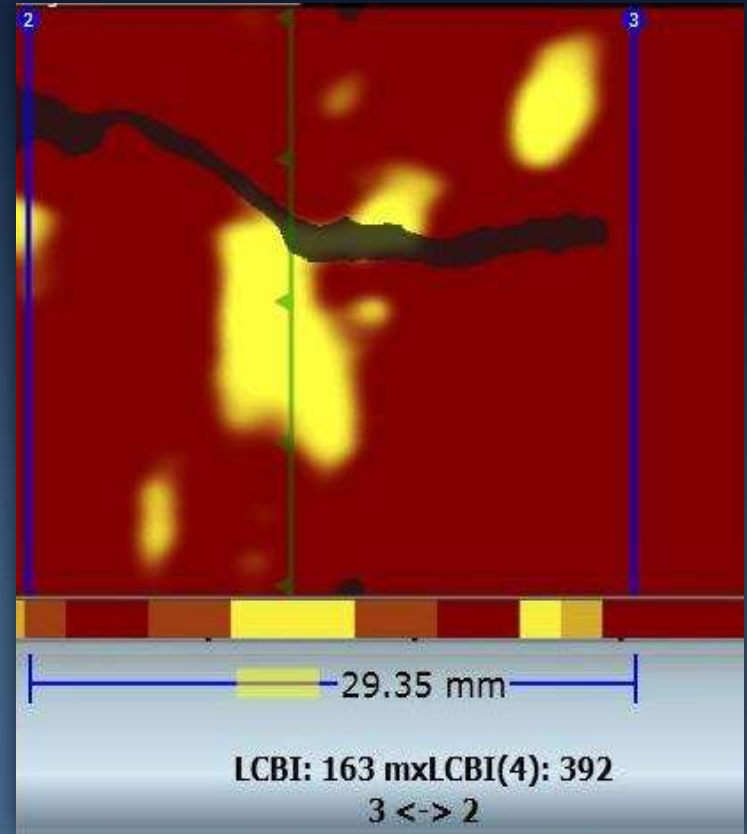
Case 1



Spectroscopy Review

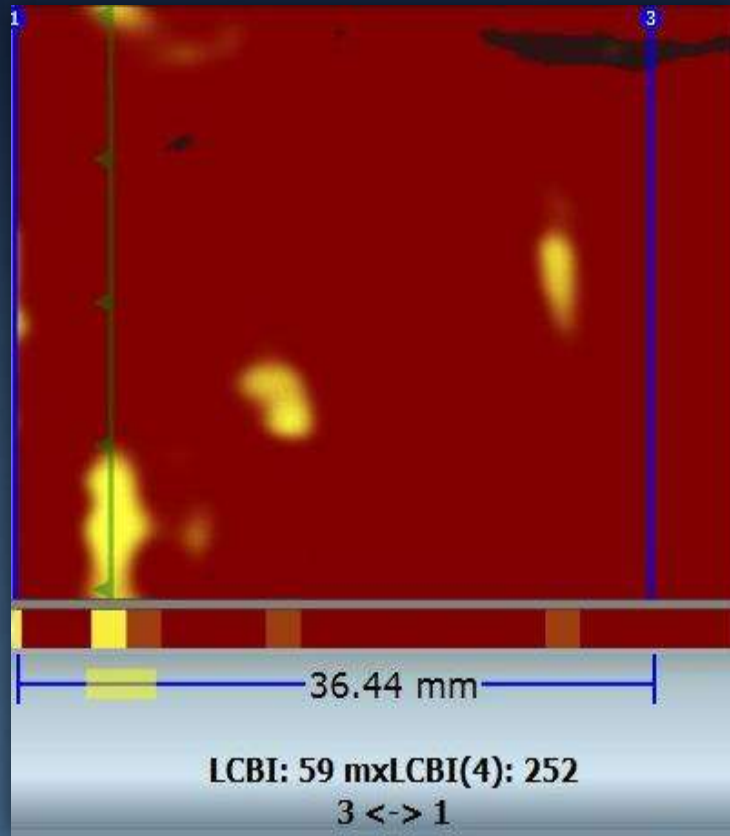


LAD mxLCBI(4)

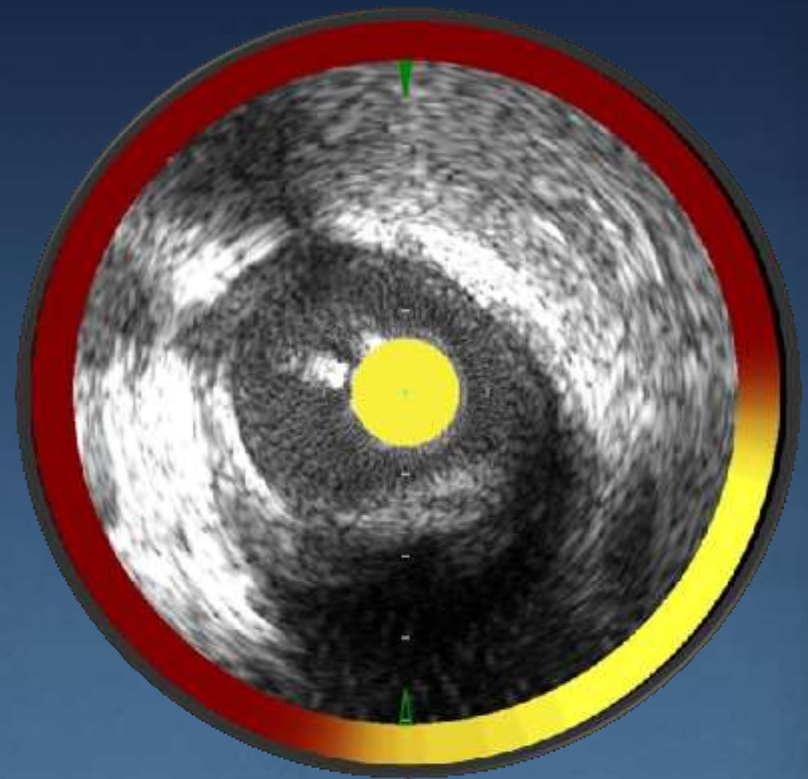


LCX mxLCBI(4)

Spectroscopy Review

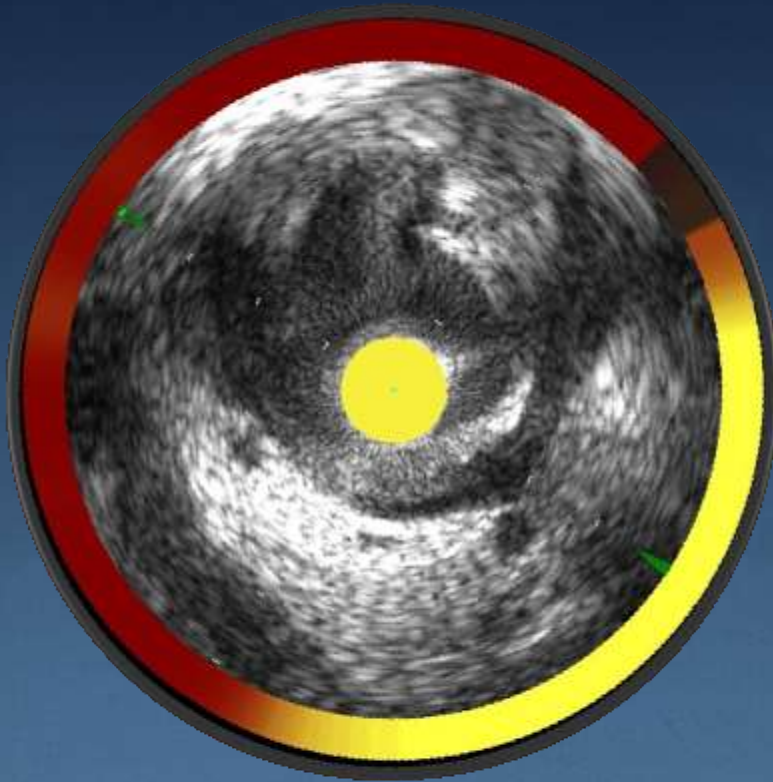


LAD mxLCBI(4)

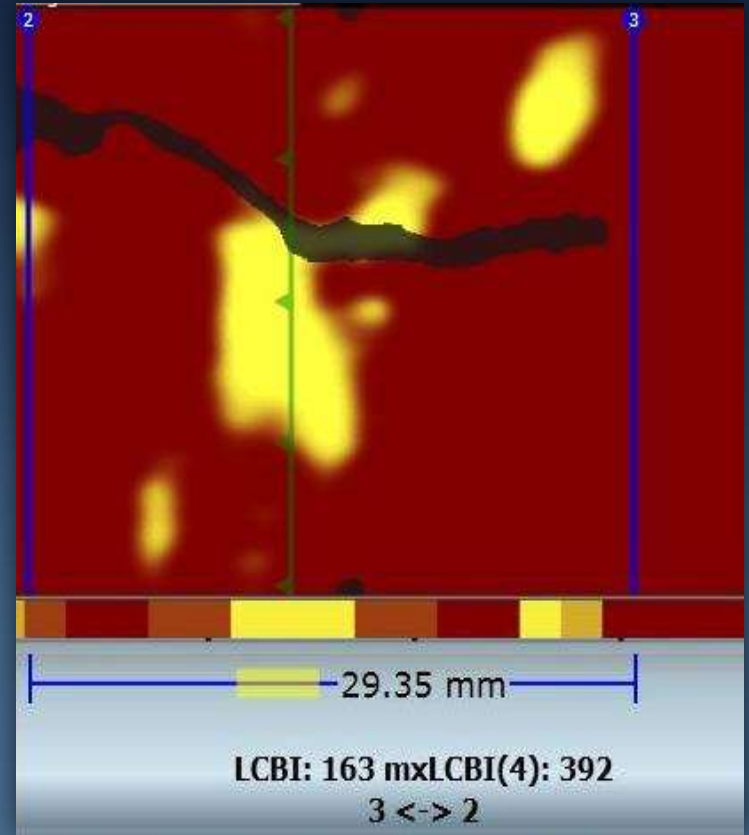


Distal Left Main

Spectroscopy Review

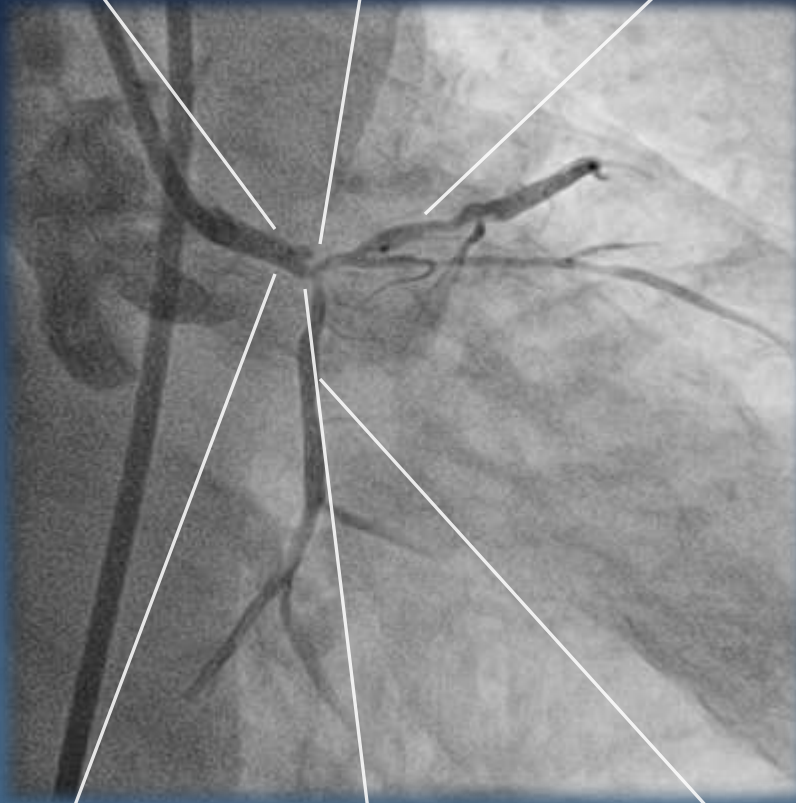


LCX POC

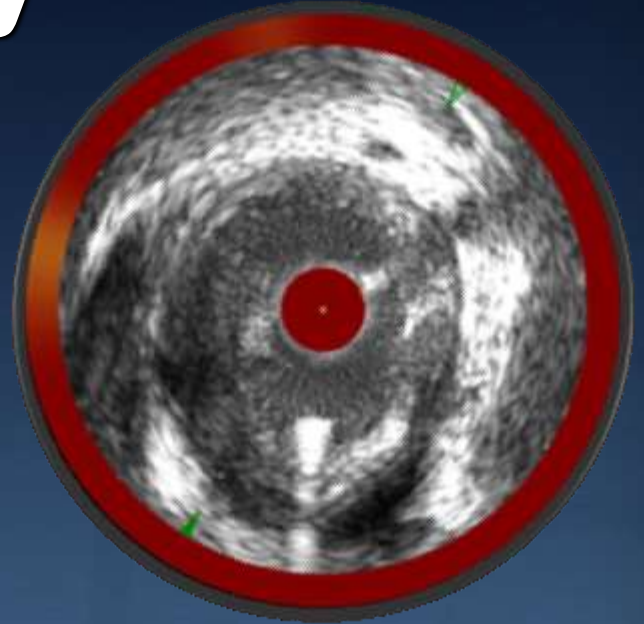


LCX mxLCBI(4)

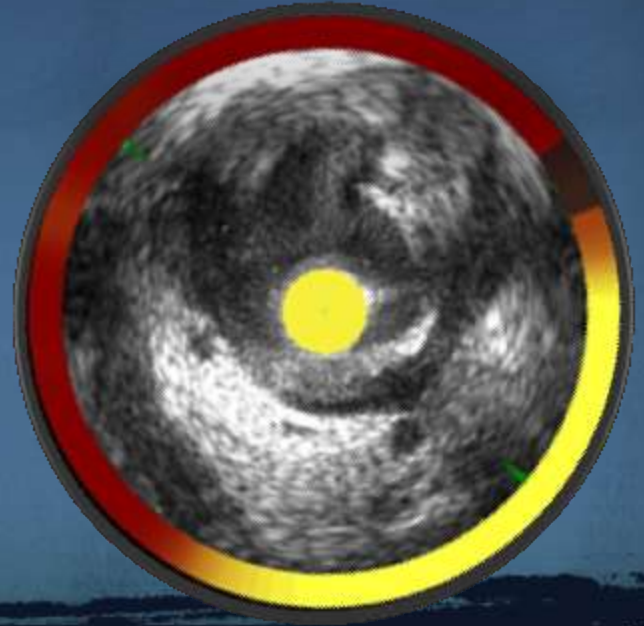
Summary



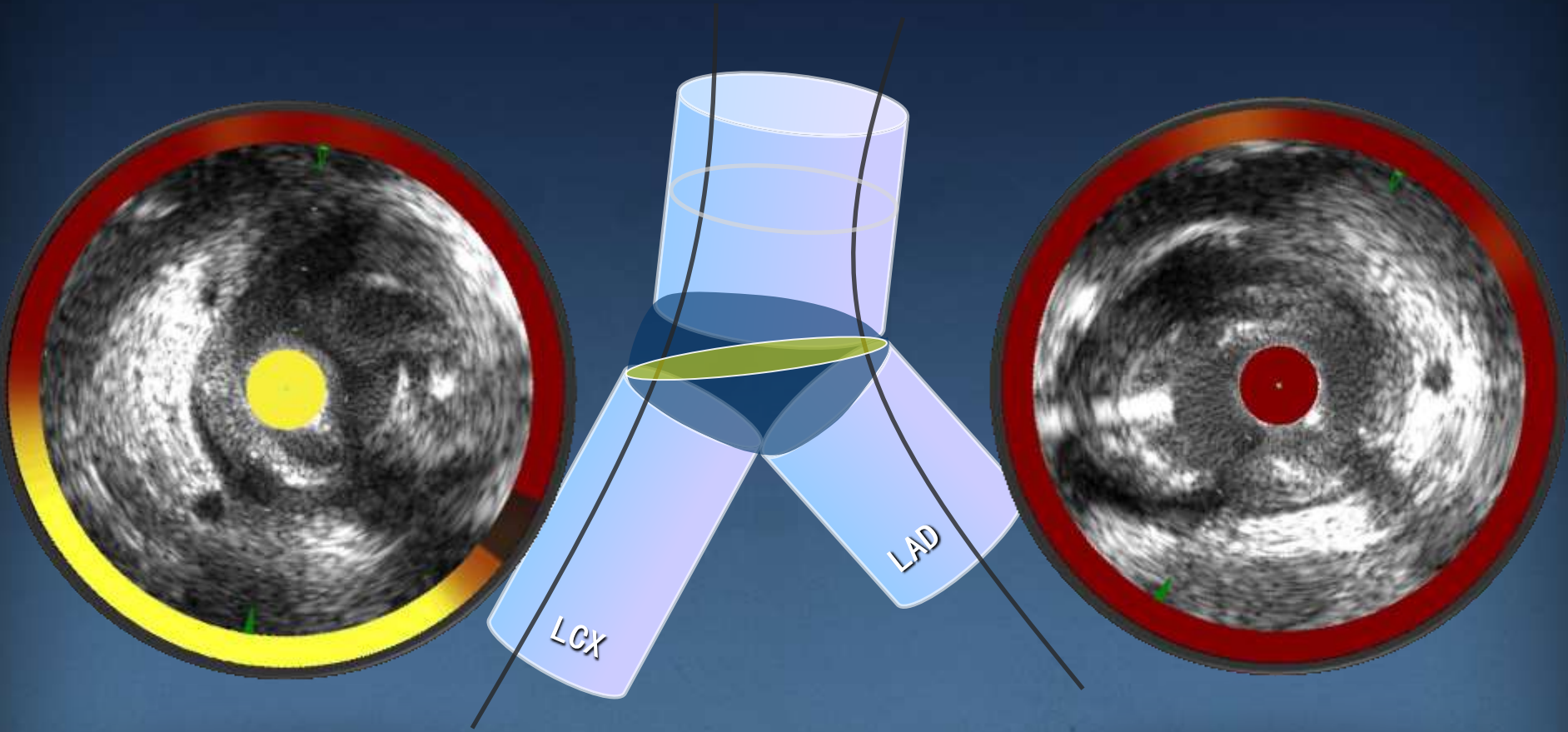
LAD - LM



LCX - LM



Summary



Case 2 Briefing

Brief Case Summary

Age : 49

Sex : Male

Etc. : smoker

Unstable Angina

Cardiac Echo : LAD/RCA 40

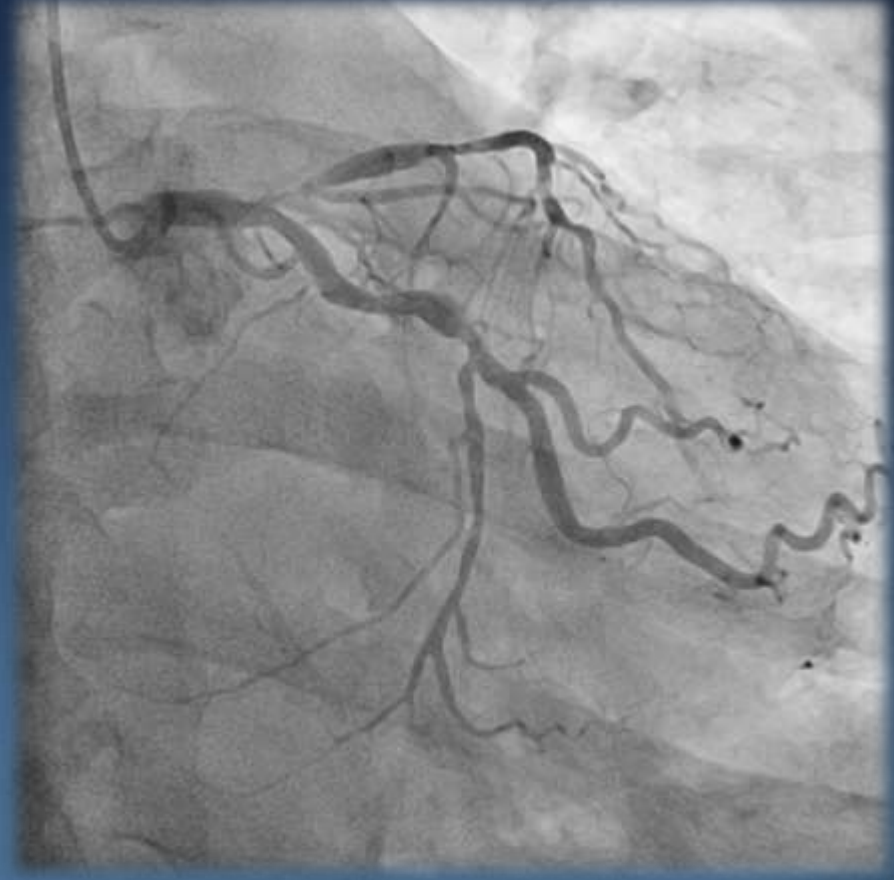
Thallium : None

Previous MI : Y

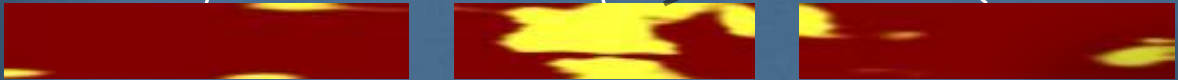
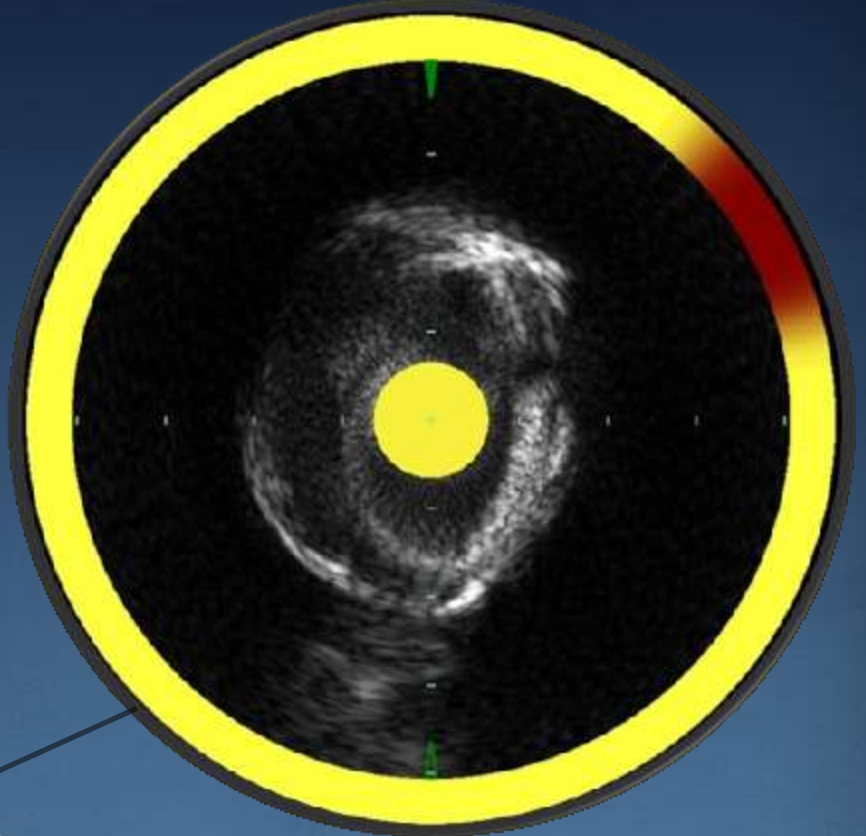
Previous PCI : None

Previous CABG : None

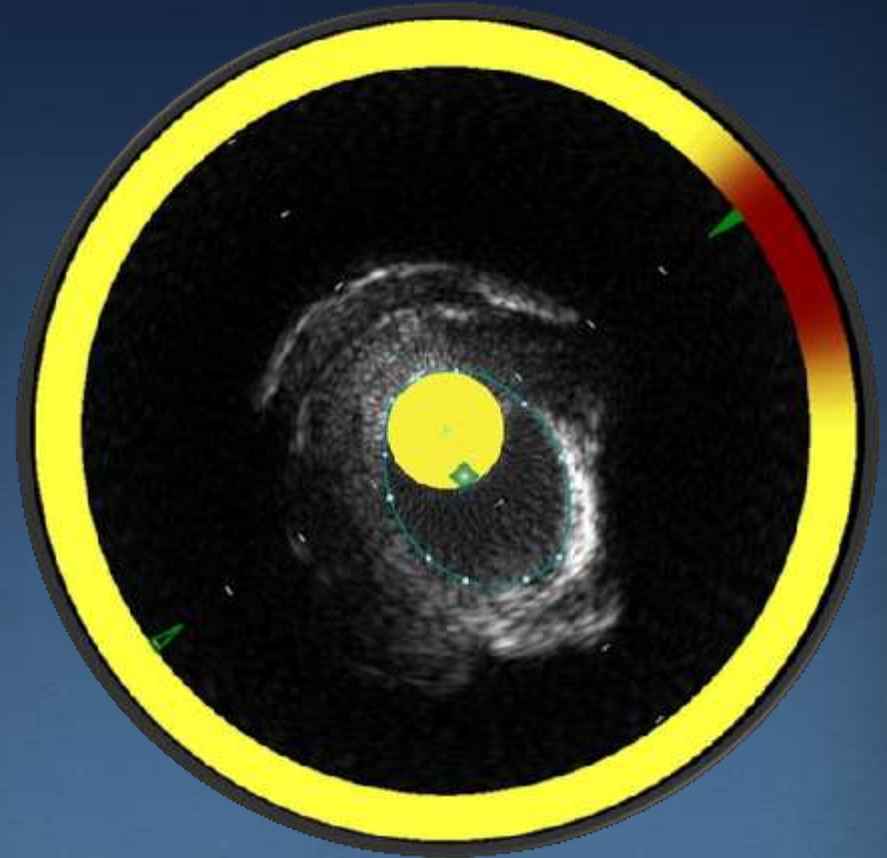
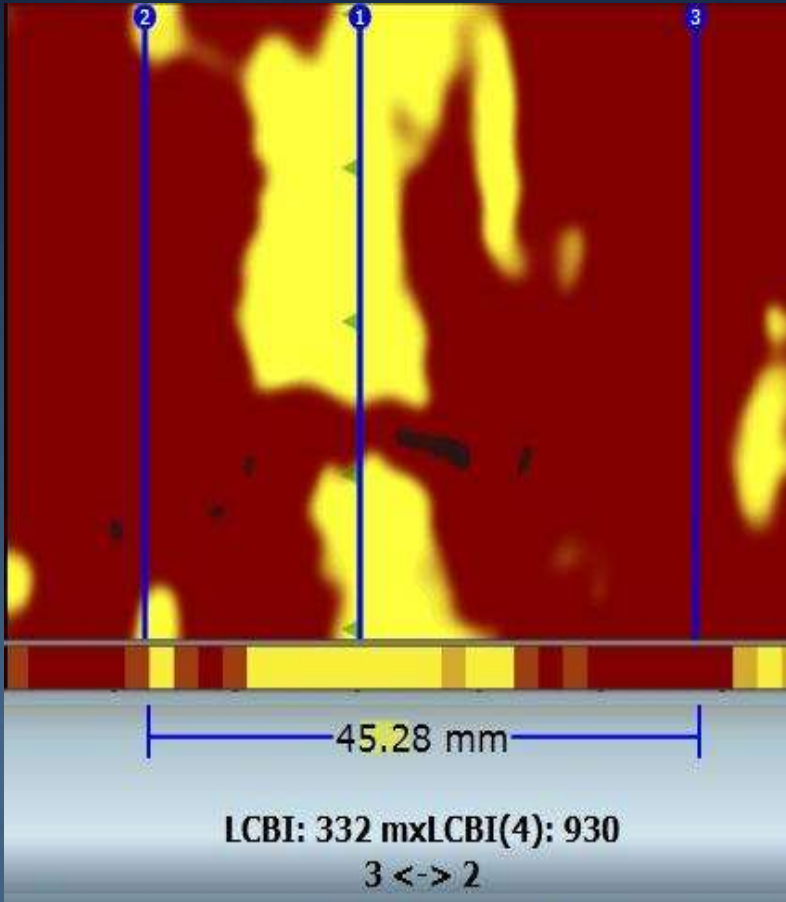
Angiography Review



Spectroscopy Review

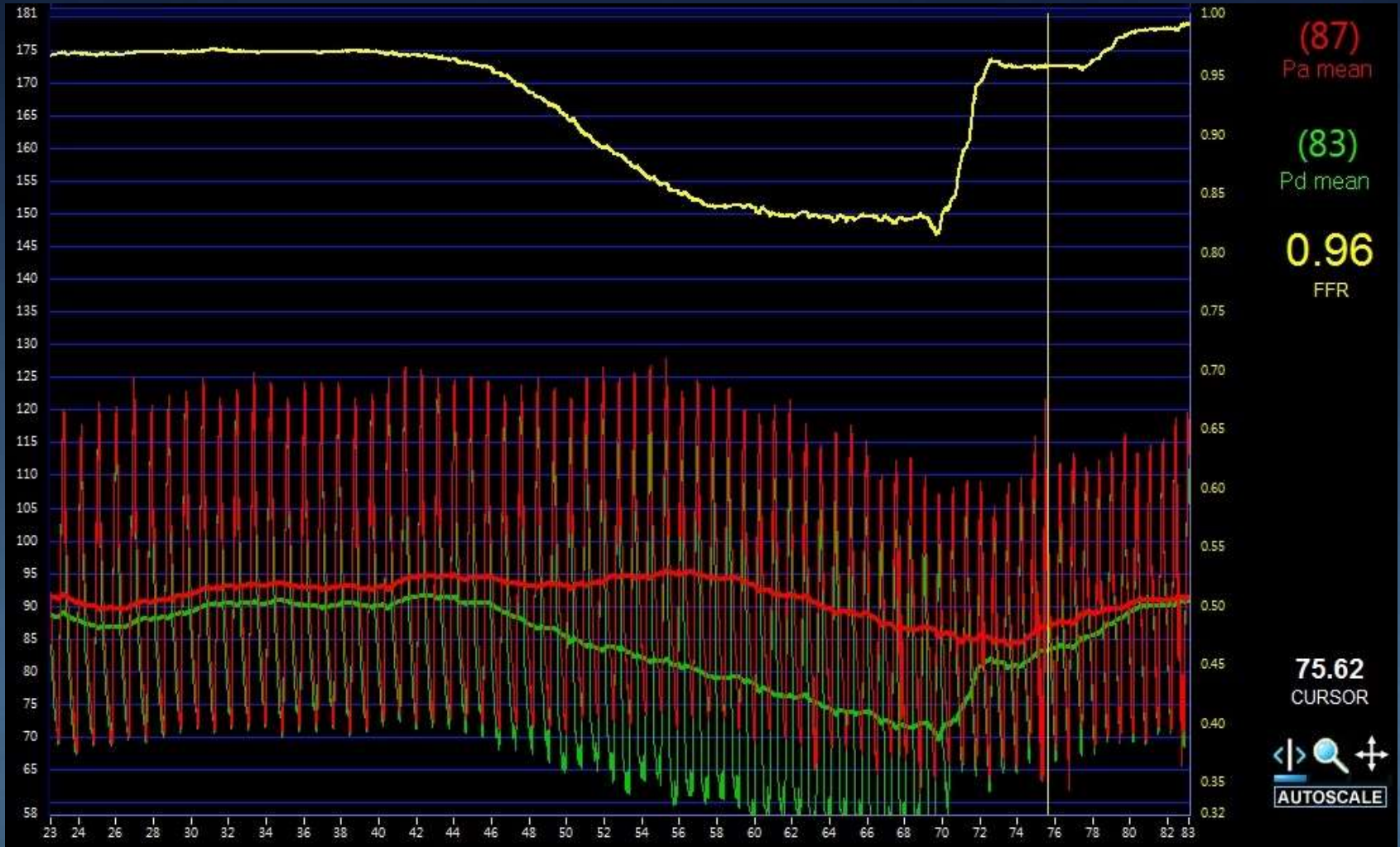


Spectroscopy Review



*MLA 2.8 mm²,
Plaque burden 81%*

FFR Image



Summary

Circulation: Cardiovascular Interventions



Table 1.

Baseline Characteristics of Study Participants With and Without a Large Lipid-Core Plaque

	Total (n=62)	maxLCBI _{4 mm} <500 (n=48)	maxLCBI _{4 mm} ≥500 (n=14)	P ^a
Age, y, mean±SD	65.1±8.8	64.2±8.4	67.9±9.7	0.17
Sex, n (%), female	11 (17.7)	9 (18.8)	2 (14.3)	1.0
BMI, kg/m ² , mean±SD	32.0±6.5	32.7±6.5	29.6±5.9	0.12
Race, n (%), white	58 (93.5)	44 (91.7)	14 (100.0)	0.91
Prior CAD, n (%), yes	52 (83.9)	40 (83.3)	12 (85.7)	1.0
Prior MI, n (%), yes	23 (37.1)	17 (35.4)	6 (42.9)	0.75
DM, n (%)				
DMI	1 (1.6)	1 (2.1)	0 (0.0)	1.0
DMII	29 (46.8)	23 (47.9)	6 (42.9)	0.77
Smoking, n (%)				
Never	11 (17.7)	7 (14.6)	4 (28.6)	
Quit	36 (58.1)	30 (62.5)	6 (42.9)	
Current	14 (22.6)	11 (22.9)	3 (21.4)	1.0 [†]
HTN, n (%), yes	57 (91.9)	45 (93.8)	12 (85.7)	0.31
HLD, n (%), yes	55 (88.7)	44 (91.7)	11 (78.6)	0.18
LDL, mg/dL, mean±SD	83.8±36.1	73.8±32.9	110.4±31.4	0.002 [‡]
HDL, mg/dL, mean±SD	36.1±9.9	36.1±10.7	36.2±7.8	0.96 [§]
HLD Rx, n (%), [†] yes	53 (85.5)	41 (85.4)	12 (85.7)	1.0

Table 31 Use of fractional flow reserve, intravascular ultrasound, and optical coherence tomography in SCAD

Recommendations	Class ^a	Level ^b	Ref. ^c
FFR is recommended to identify hemodynamically relevant coronary lesion(s) when evidence of ischaemia is not available.	I	A	399, 401, 405
Revascularization of stenoses with FFR <0.80 is recommended in patients with angina symptoms or a positive stress test.	I	B	400
IVUS or OCT may be considered to characterize lesions.	IIb	B	404, 406
IVUS or OCT may be considered to improve stent deployment.	IIb	B	404
Revascularization of an angiographically intermediate stenosis without related ischaemia or without FFR <0.80 is not recommended.	III	B	399, 405

FFR = fractional flow reserve; IVUS = intravascular ultrasound; OCT = optical coherence tomography; SCAD = stable coronary artery disease.

^a Class of recommendation.

^b Level of evidence.

^c Reference(s) supporting levels of evidence.

Case 3 Briefing

Brief Case Summary

Age : 74

Sex : Male

Etc. : HT / lipid / ex-sm

Stable Angina

CCTA : pLCX tub80

Cardiac Echo : Normal

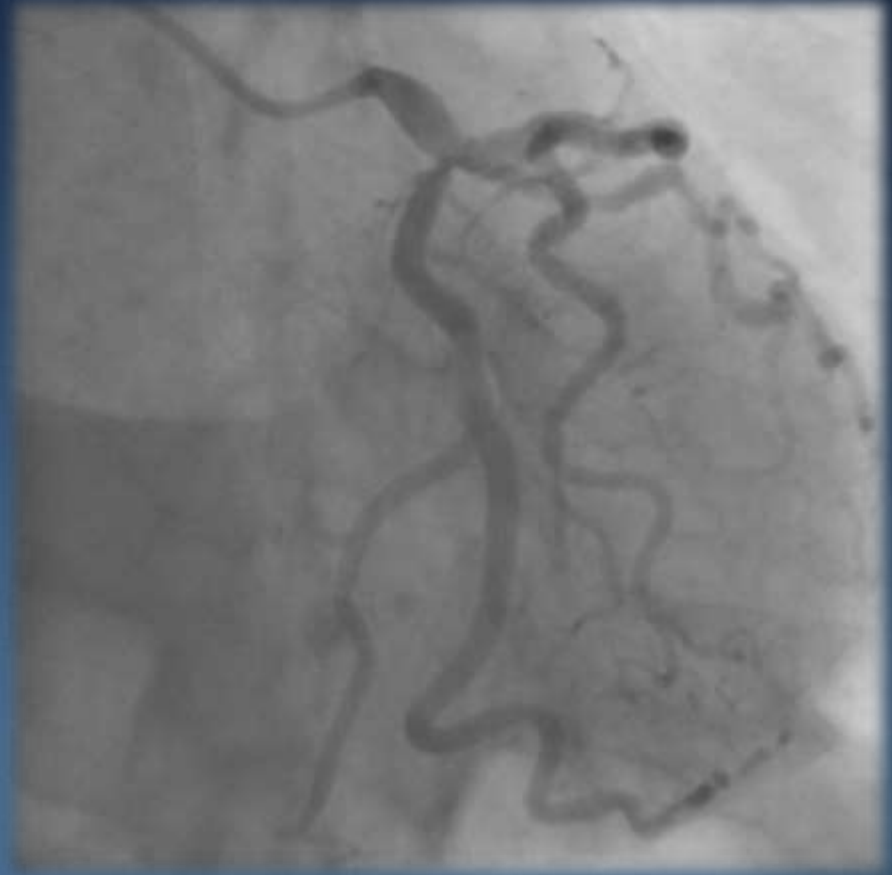
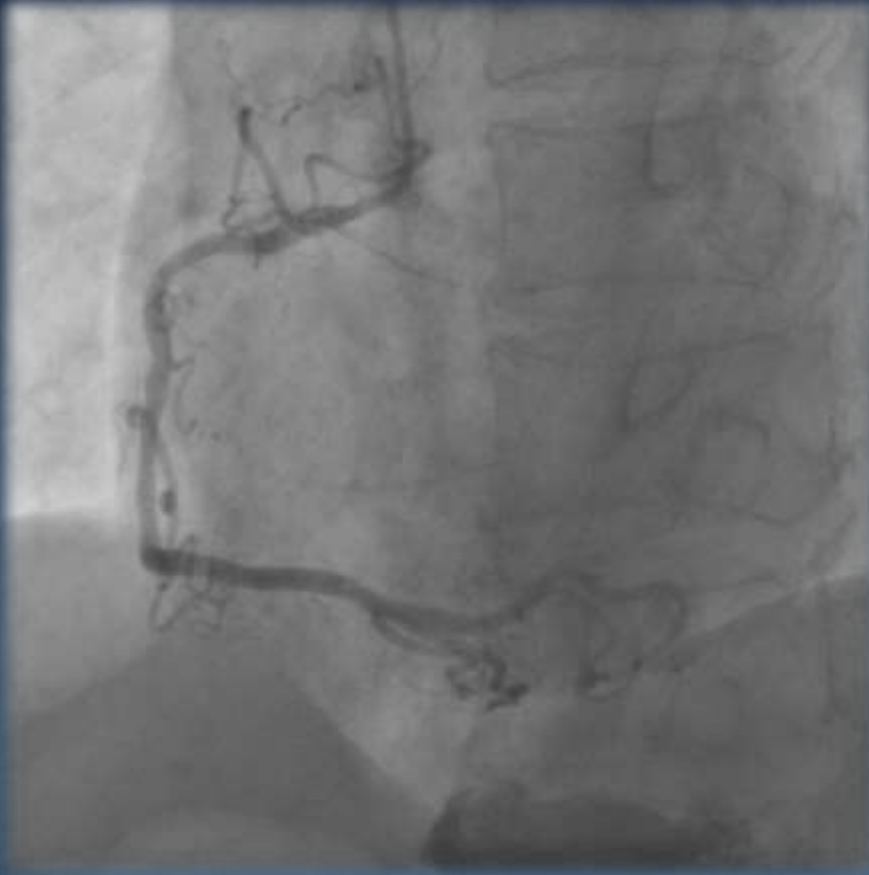
Thallium : Normal

Previous MI : None

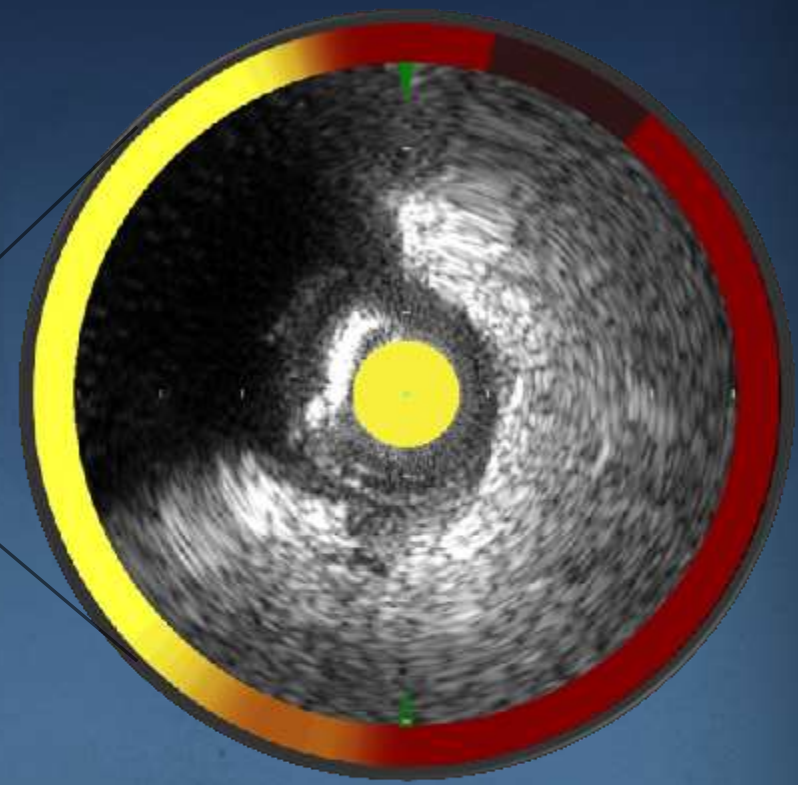
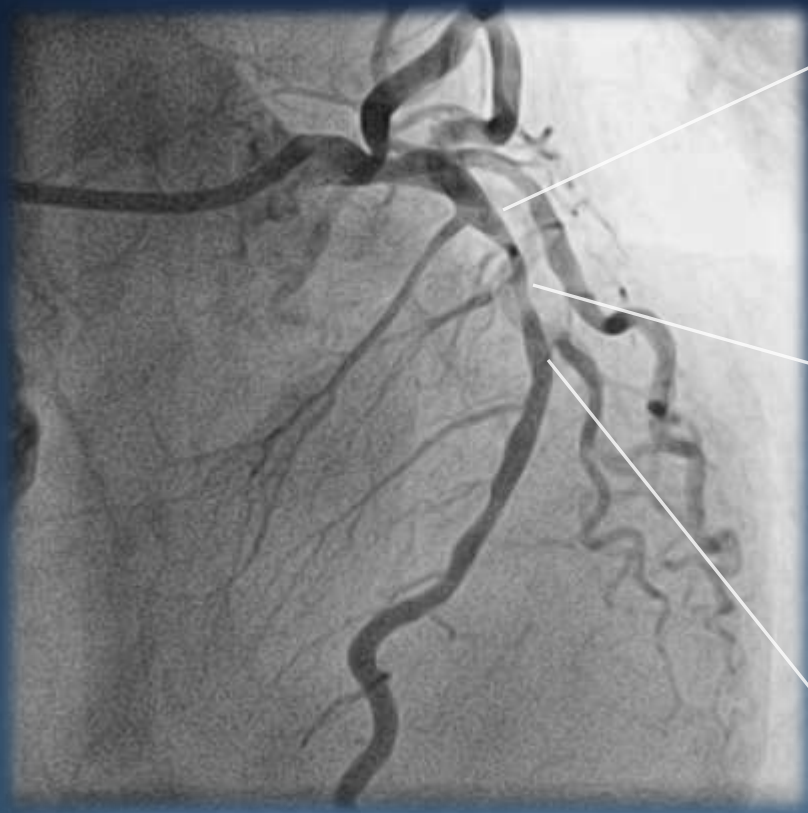
Previous PCI : None

Previous CABG : None

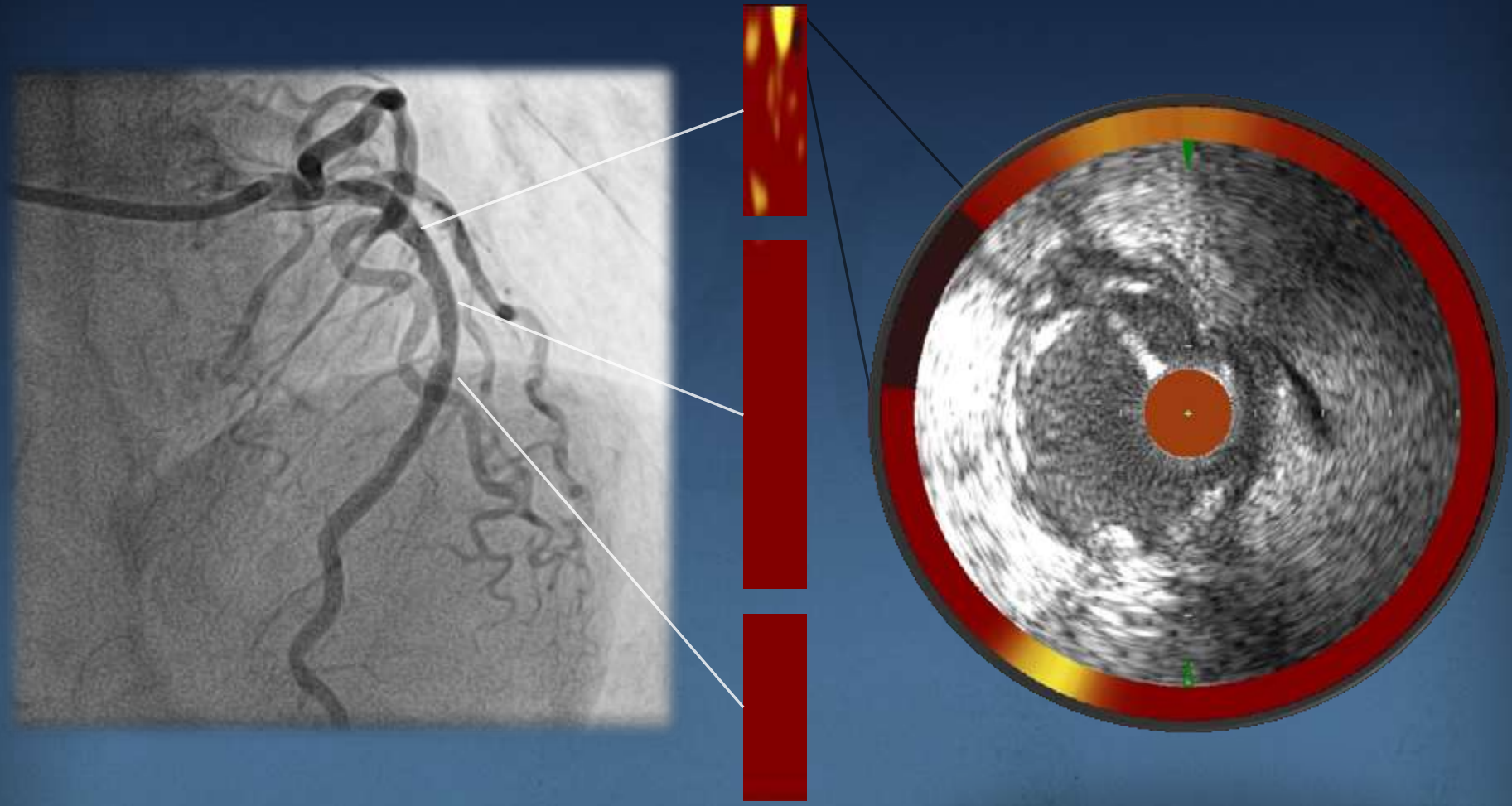
Angiography Review



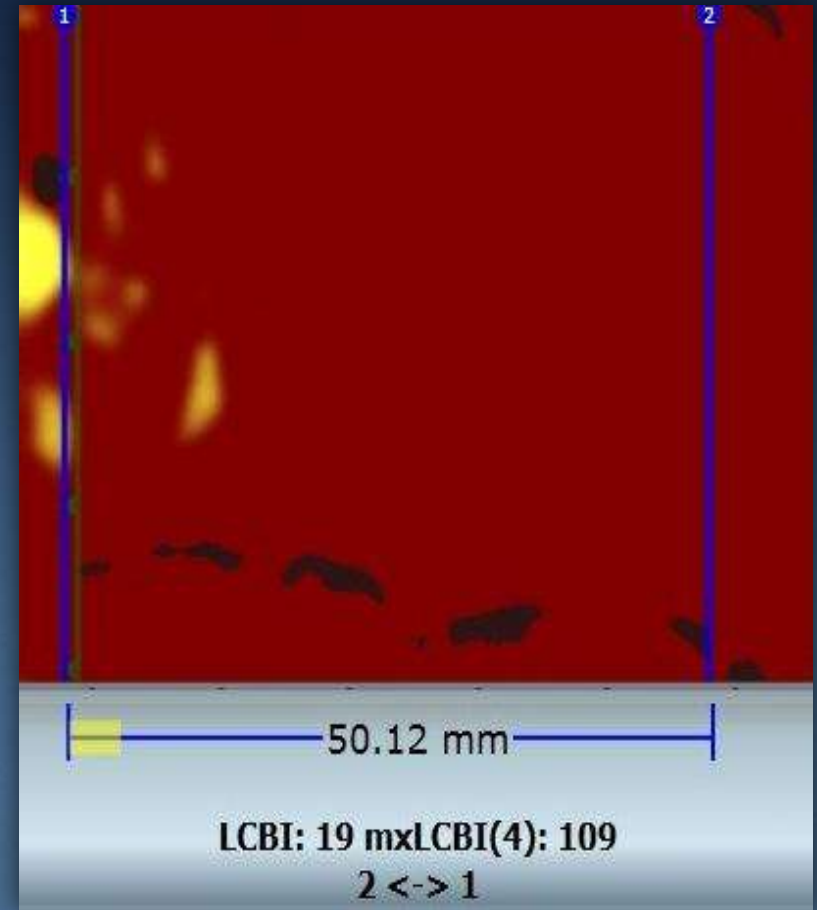
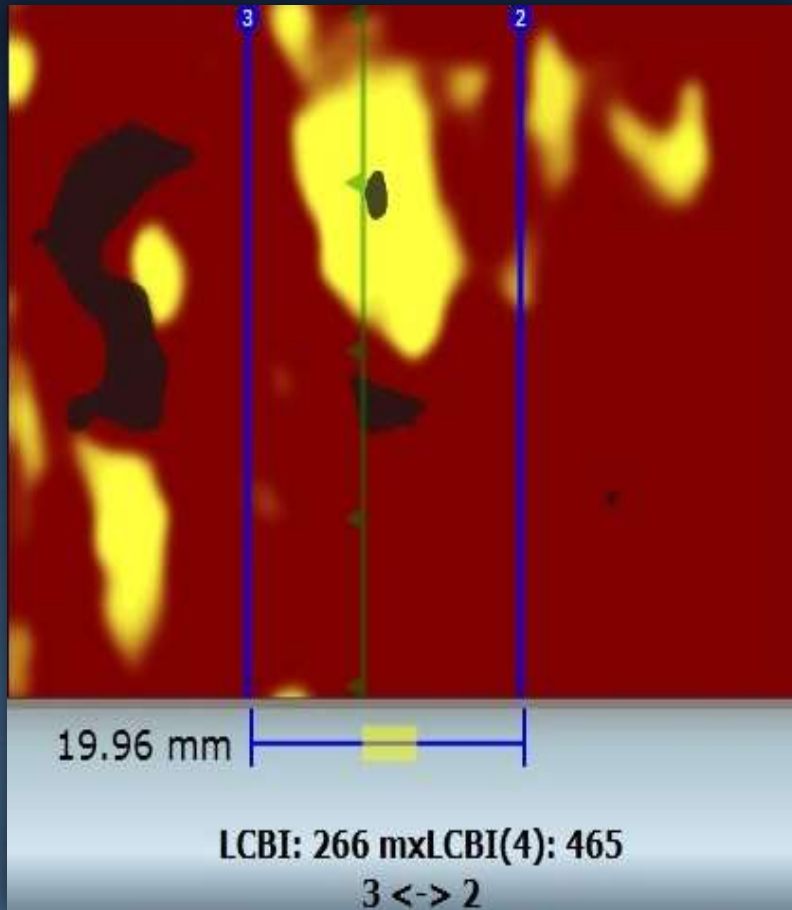
Spectroscopy Review



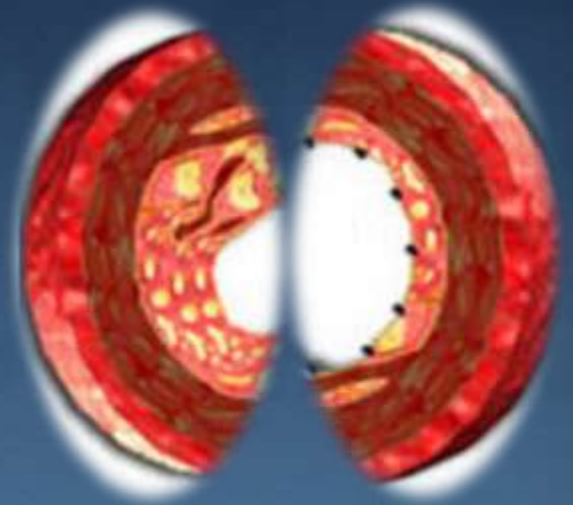
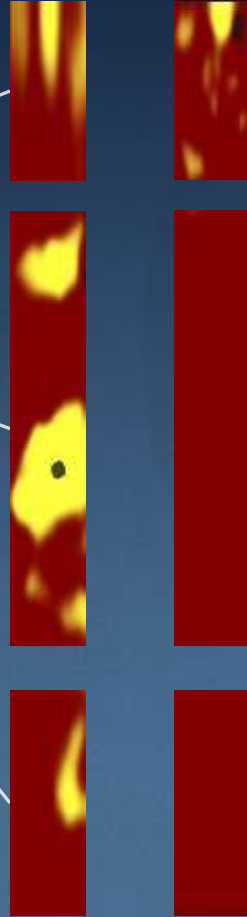
Spectroscopy Review



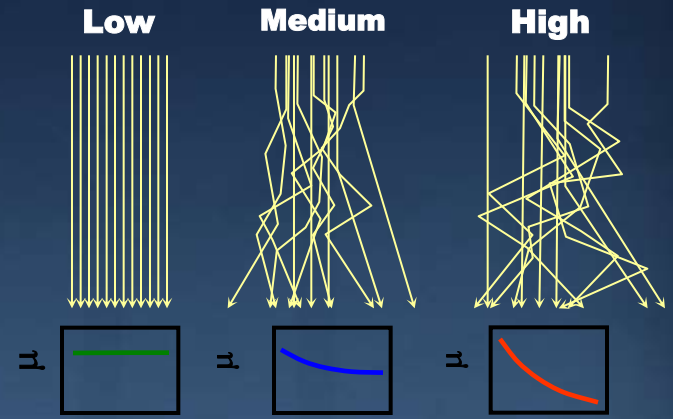
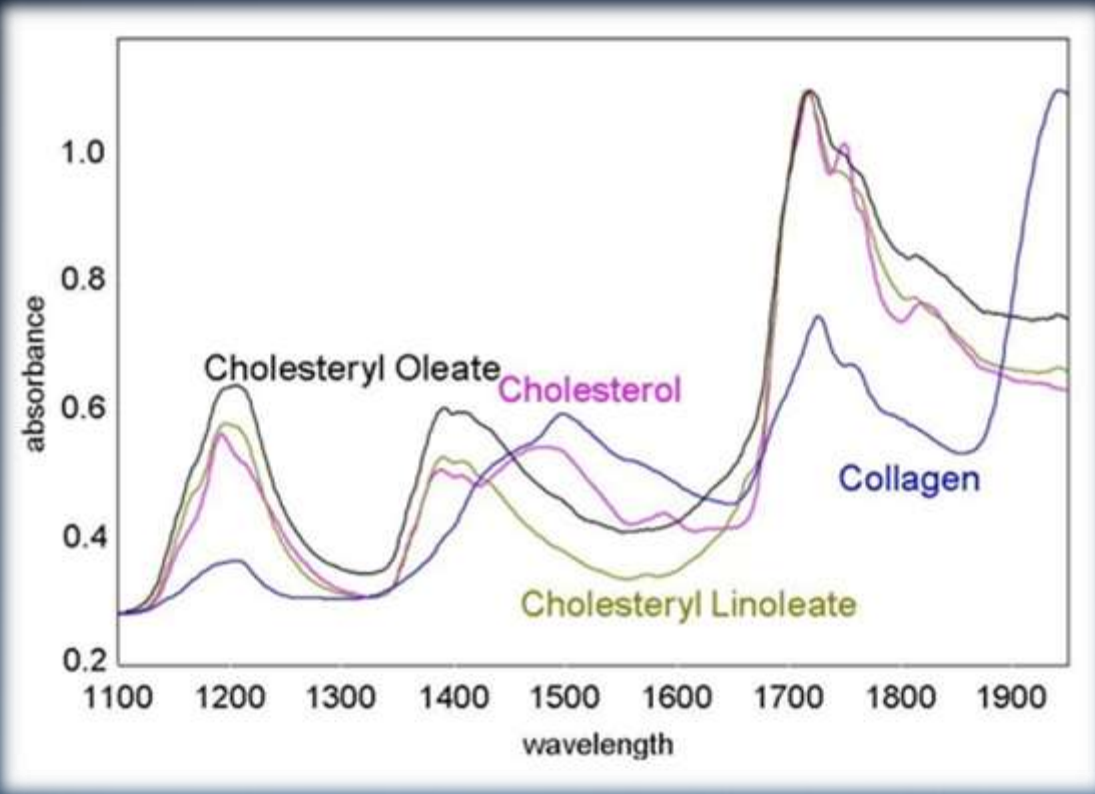
Spectroscopy Review



Summary



Summary



Pre PCI

Post Stent

Final (Post HP)

Thank you for listening