

OCT FINDINGS IN VARIANT ANGINA

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Male /42

Chest pain

1hr ago
intermittent
Shortness of breath

Vital sign

152/70mmHg
76/min

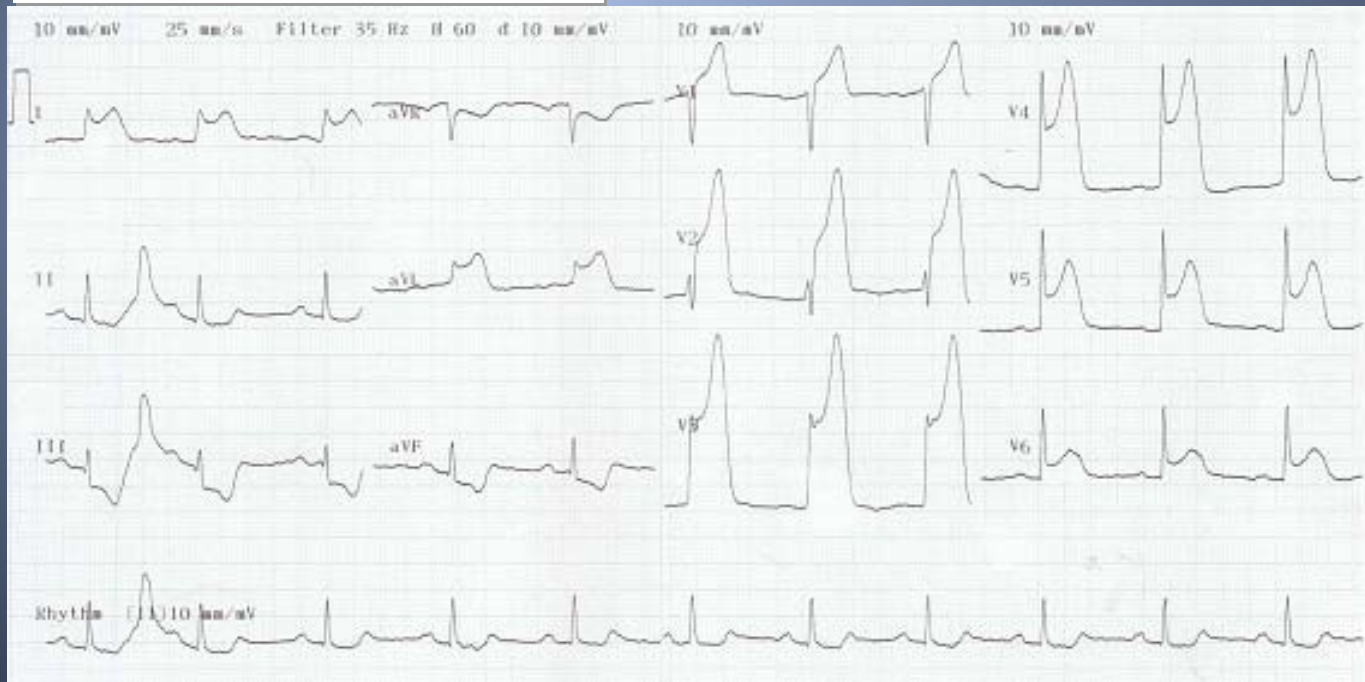
CAD risk factors

Hypertension
40 p-y smoker



12 leads ECG at Emergency Room

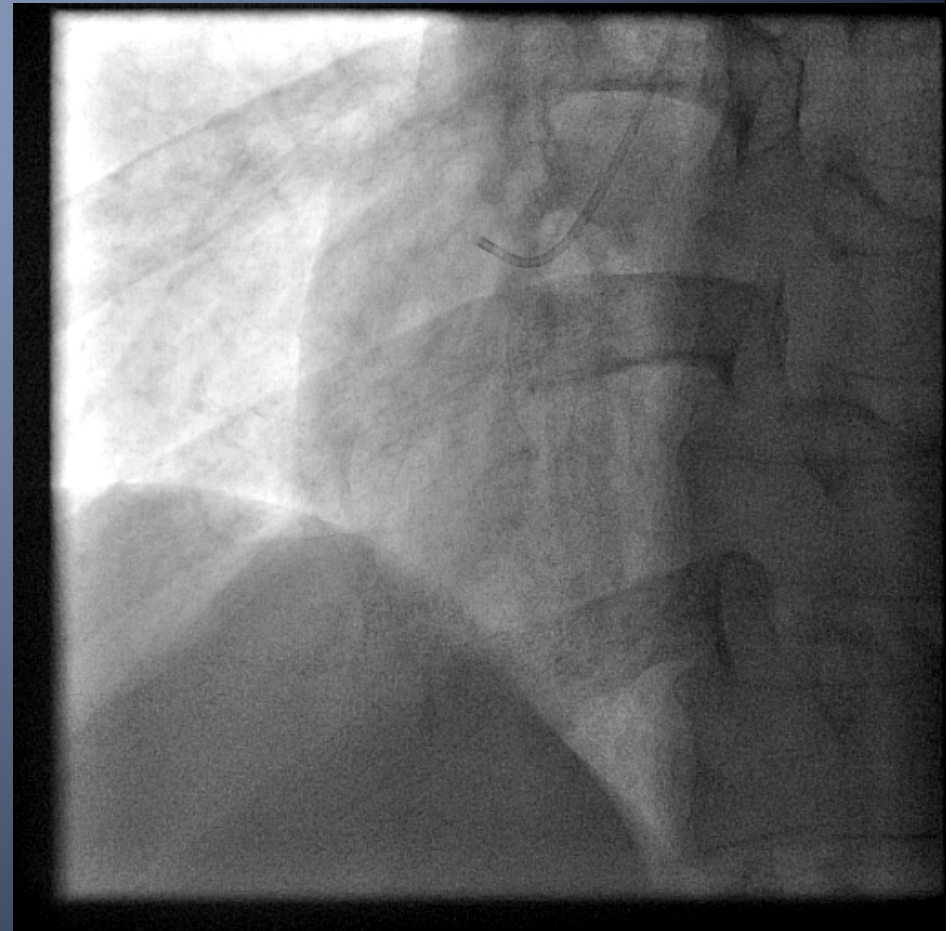
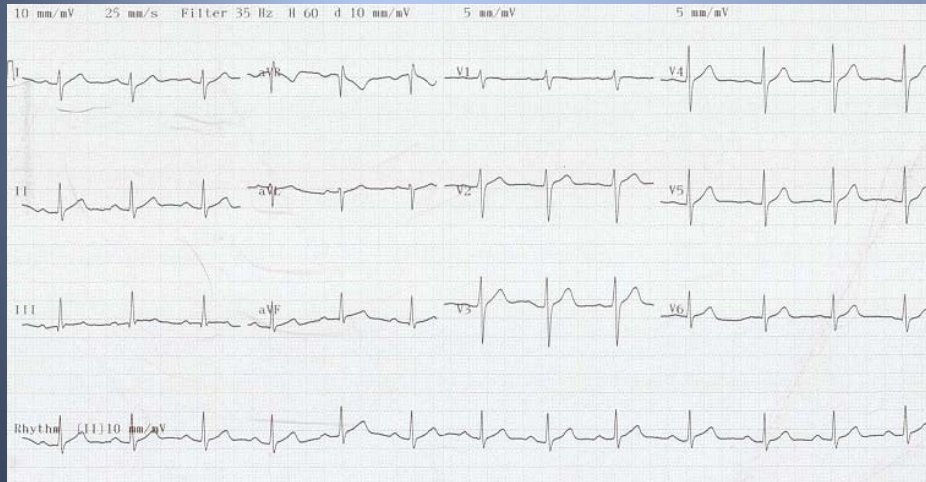
ST seg. Elevation in lead
V1-6, I, aVL



Coronary angiography

His chest pain was completely subsided at Cathroom.

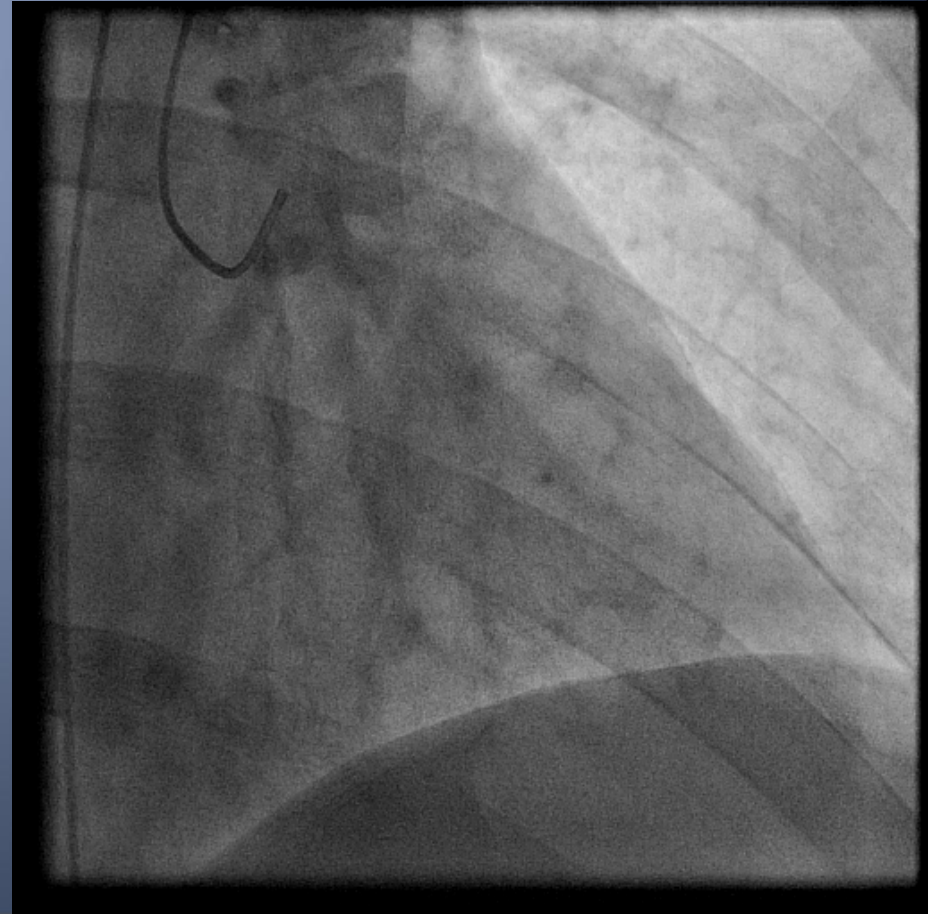
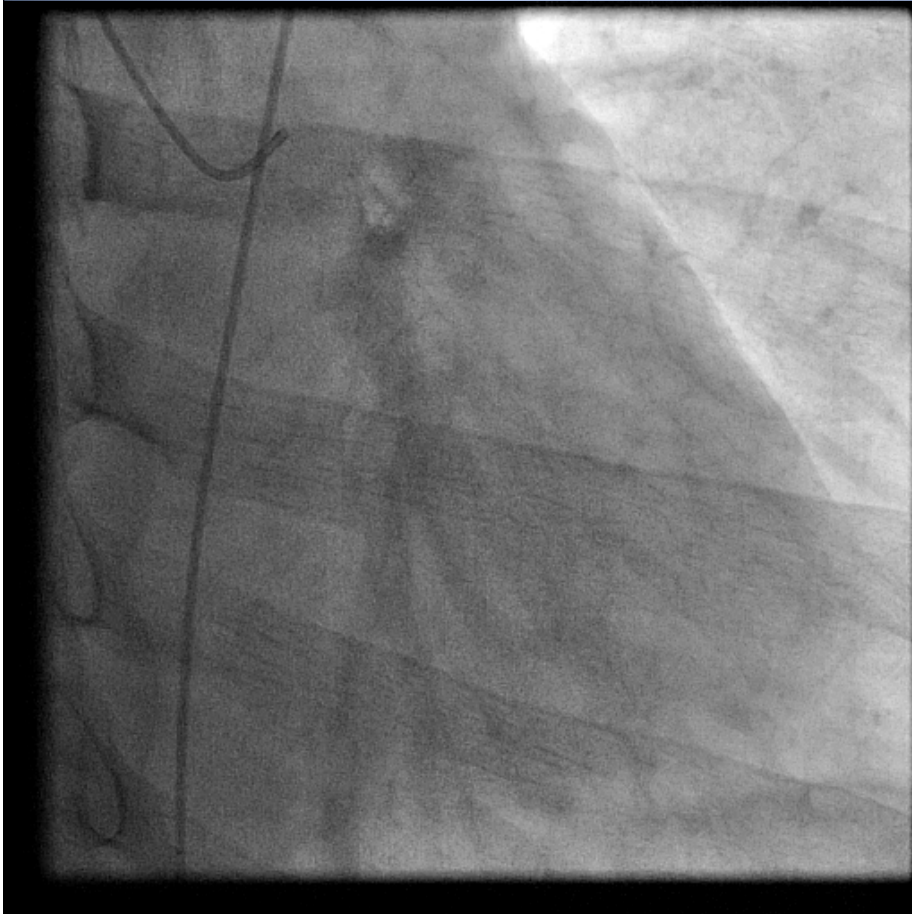
RCA
Normal angiographic result



Coronary angiography

Proximal LAD (40% stenosis) with TIMI 3 flow.

pLAD stenosis was reversed by IC. NTG



Which pathogenesis do we expect?



Spasm?

Soft plaque rupture?

Thrombus?

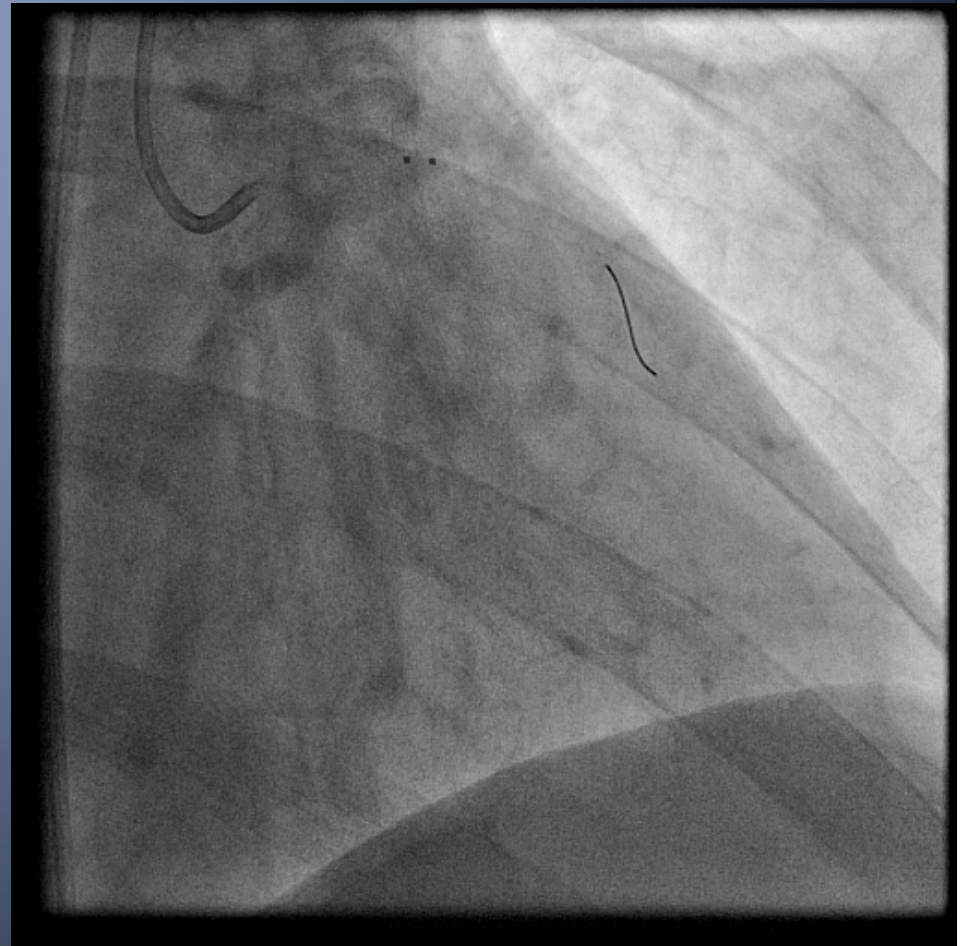
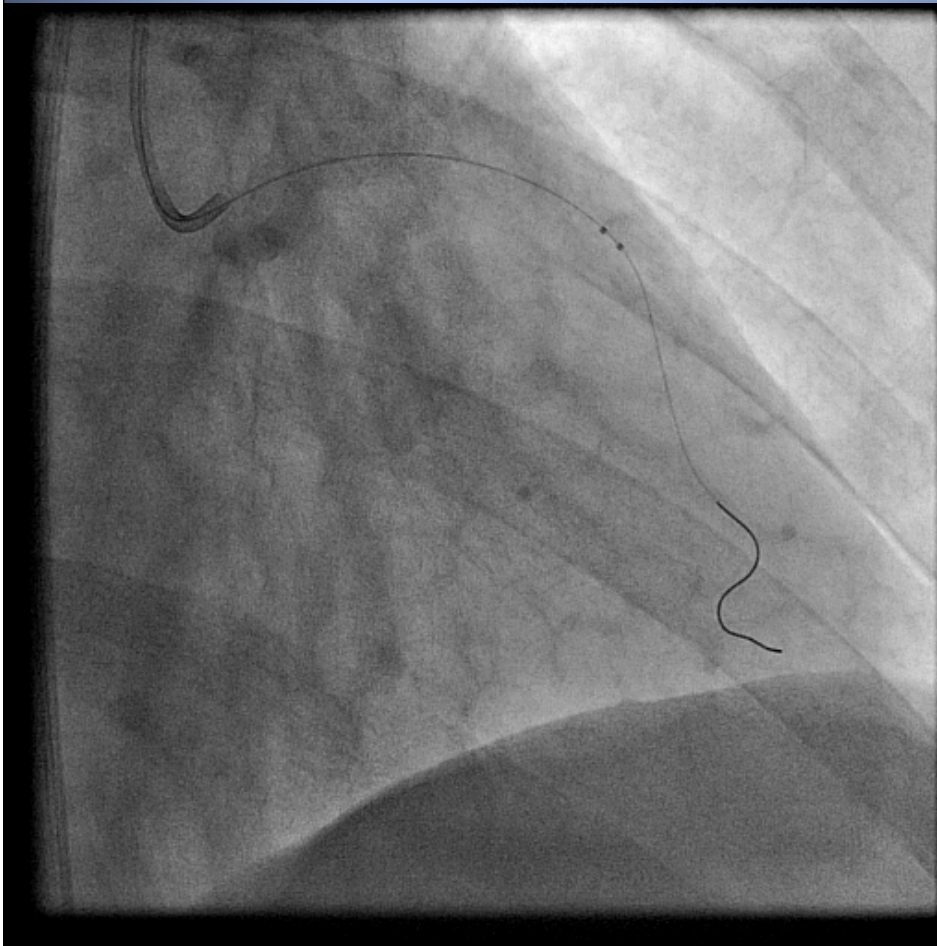
Others?



Optical coherence tomography

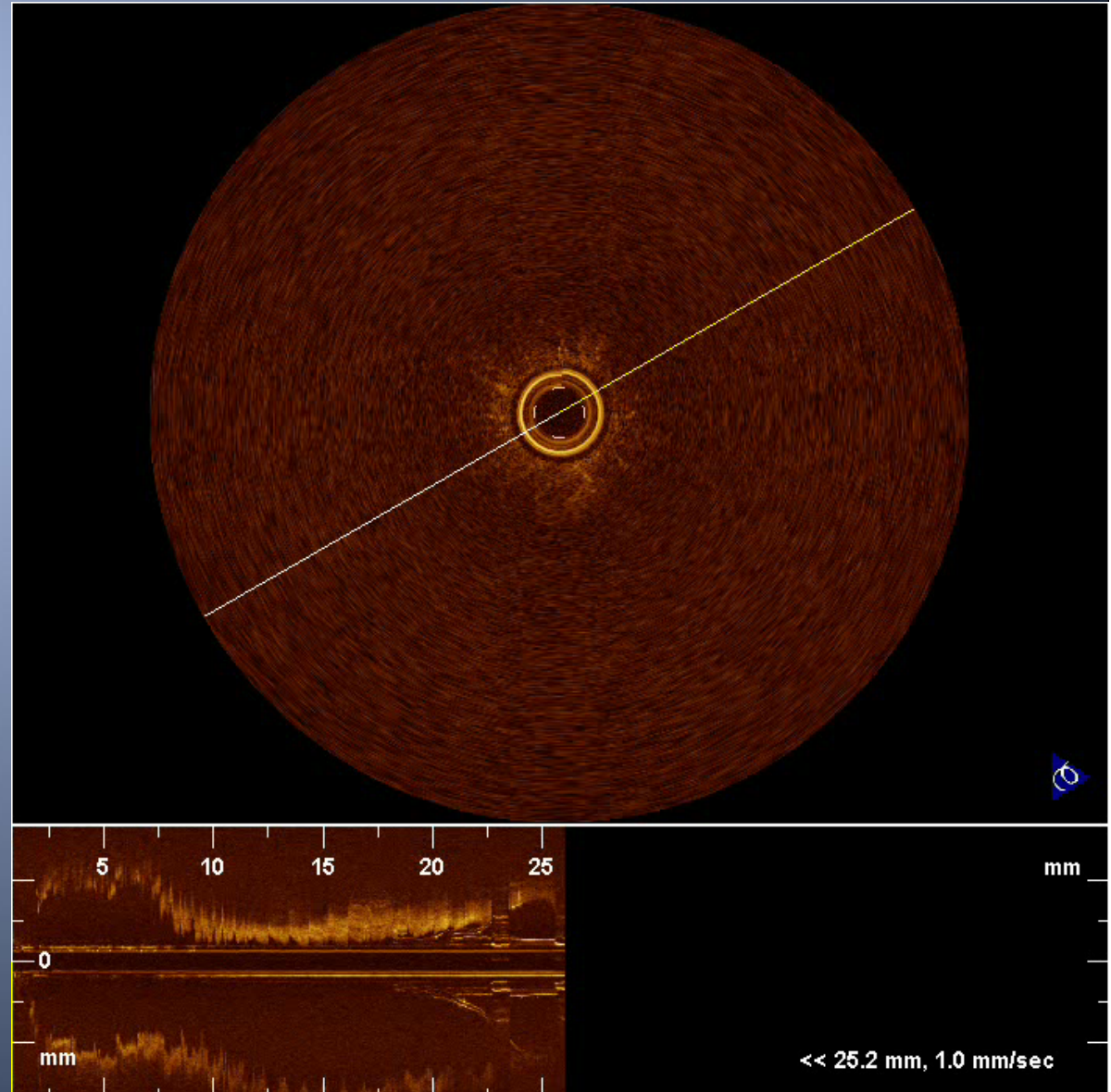
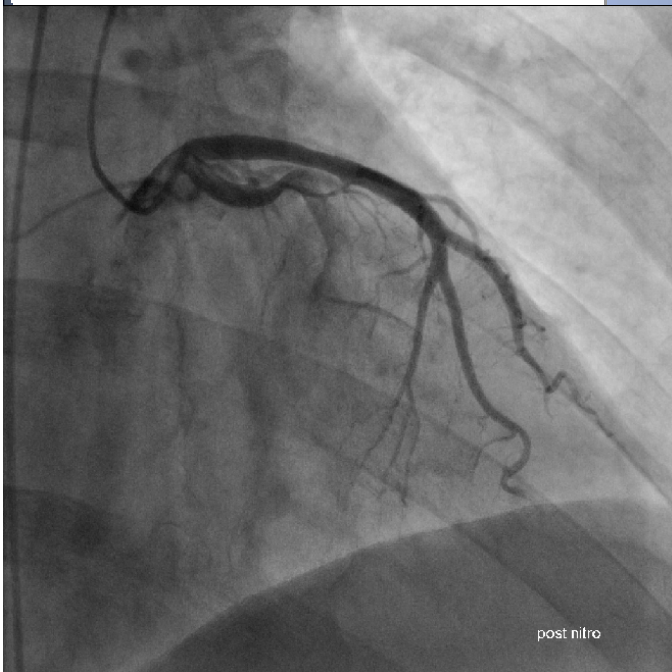
occlusion balloon
over the
conventional GW

Imaging catheter
Occlusion balloon



Optical coherence tomography

Intimal hyperplasia
thrombus
intimal tear
soft plaque
calcification



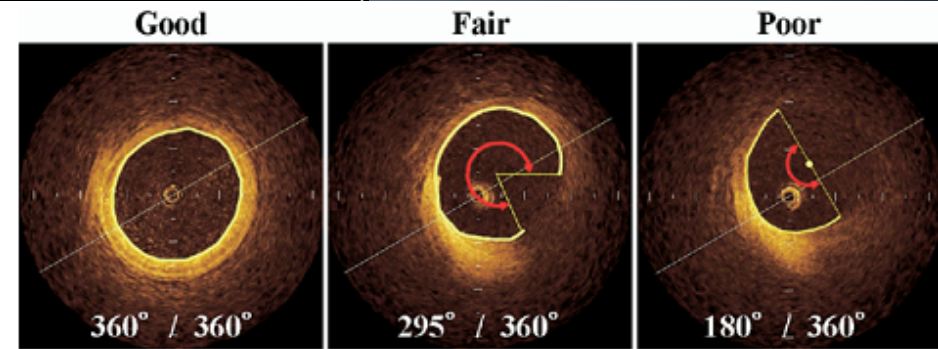
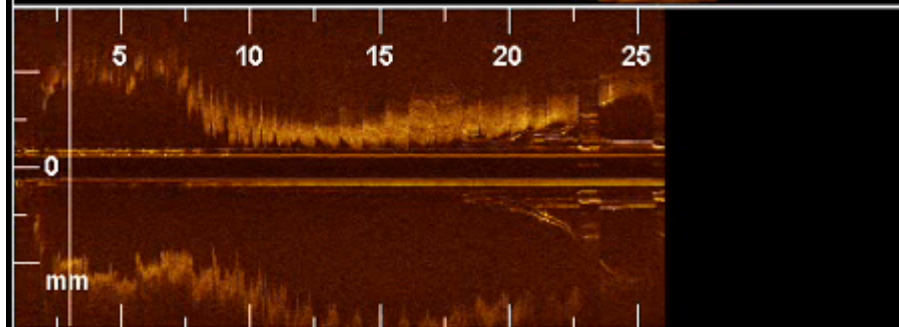
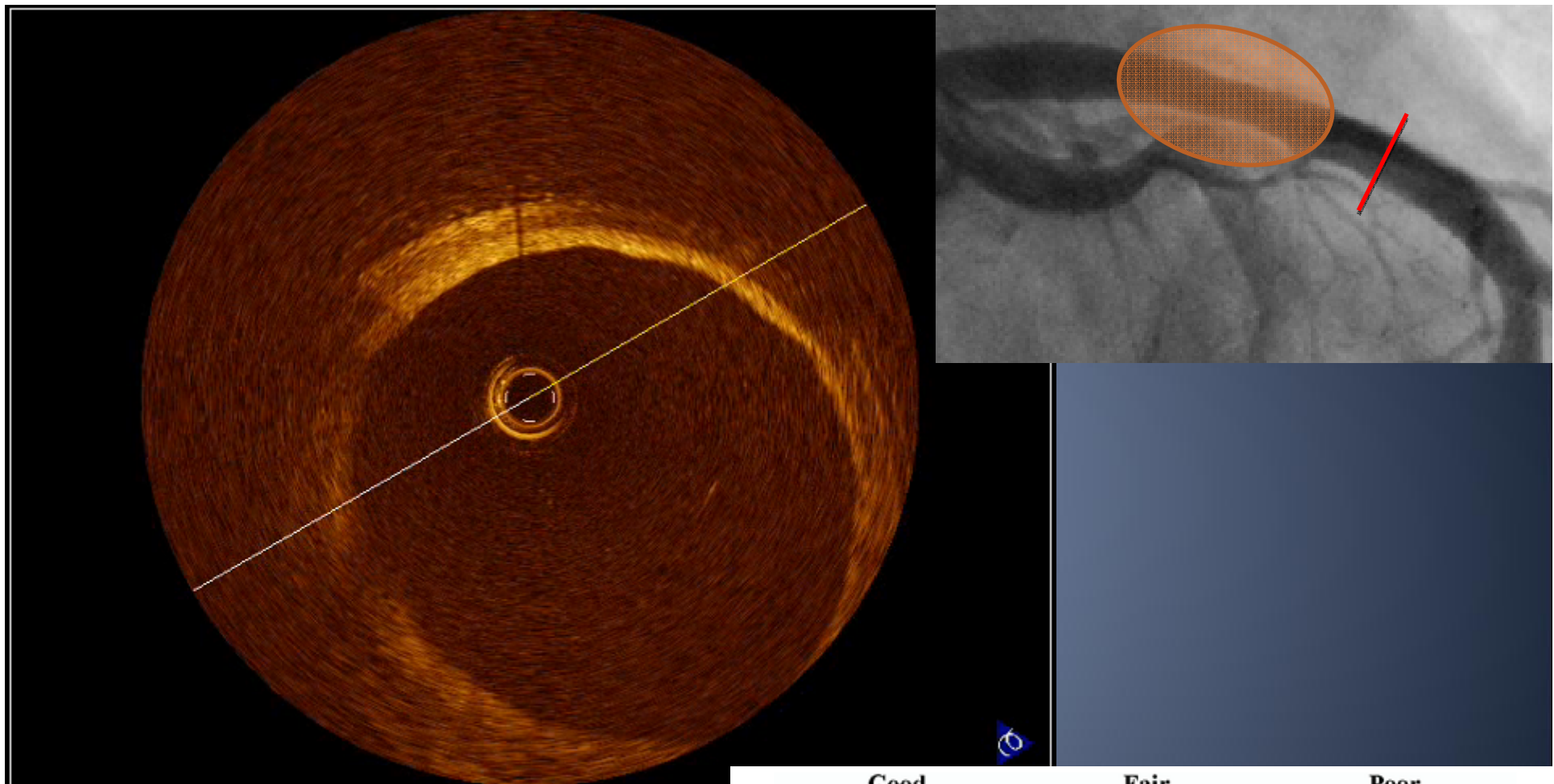
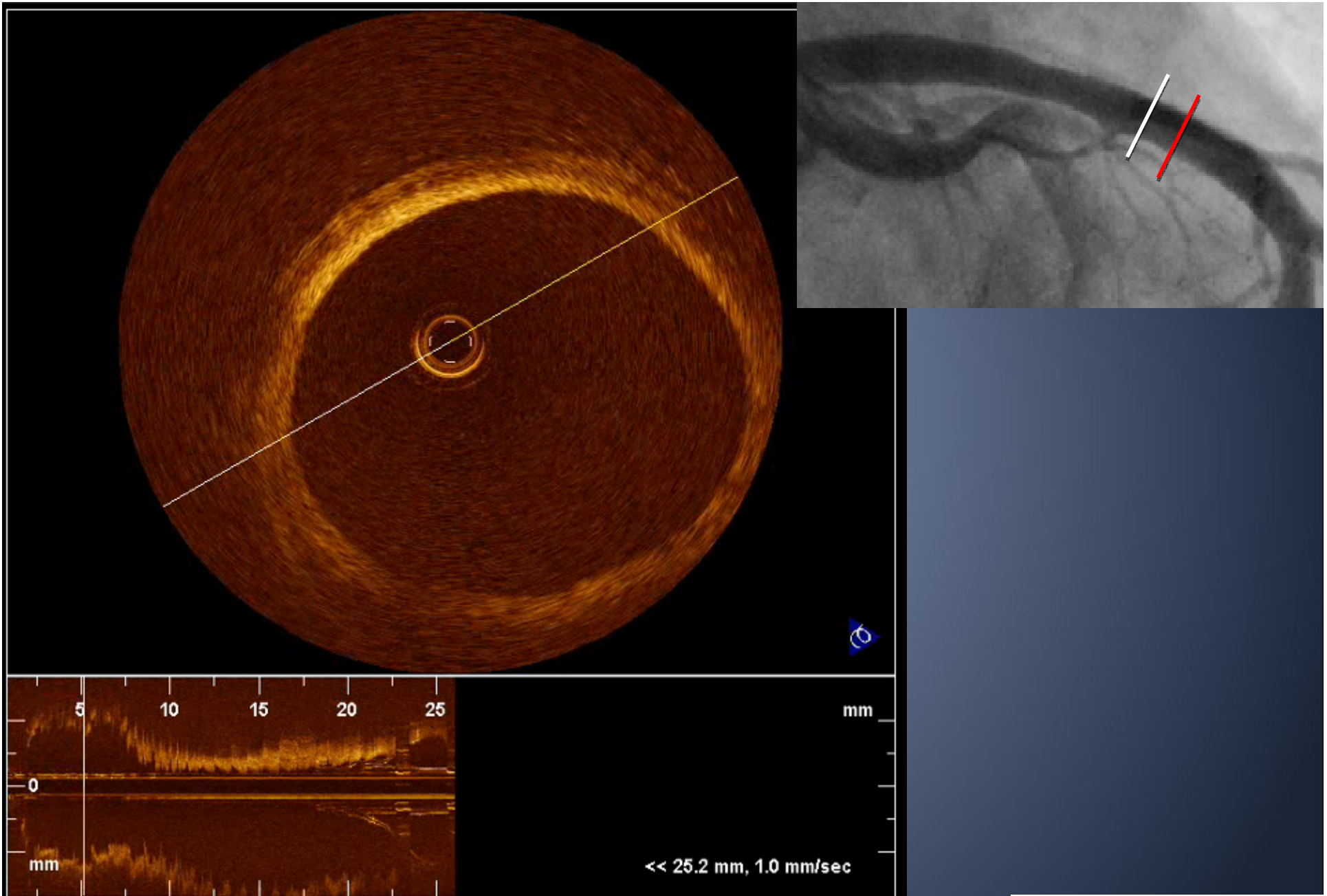
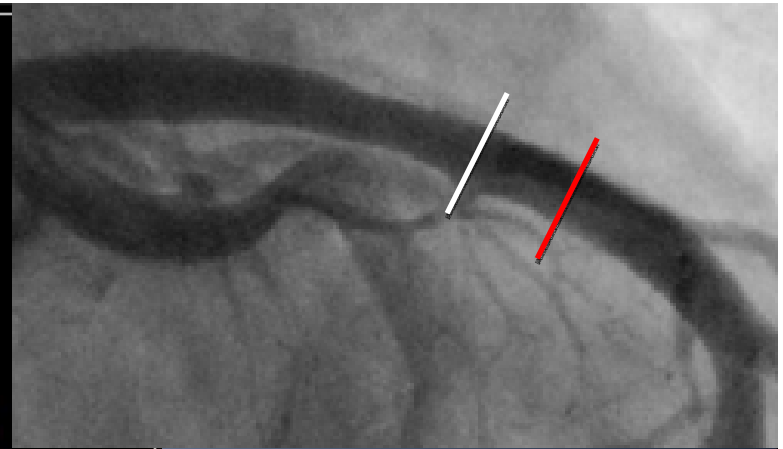
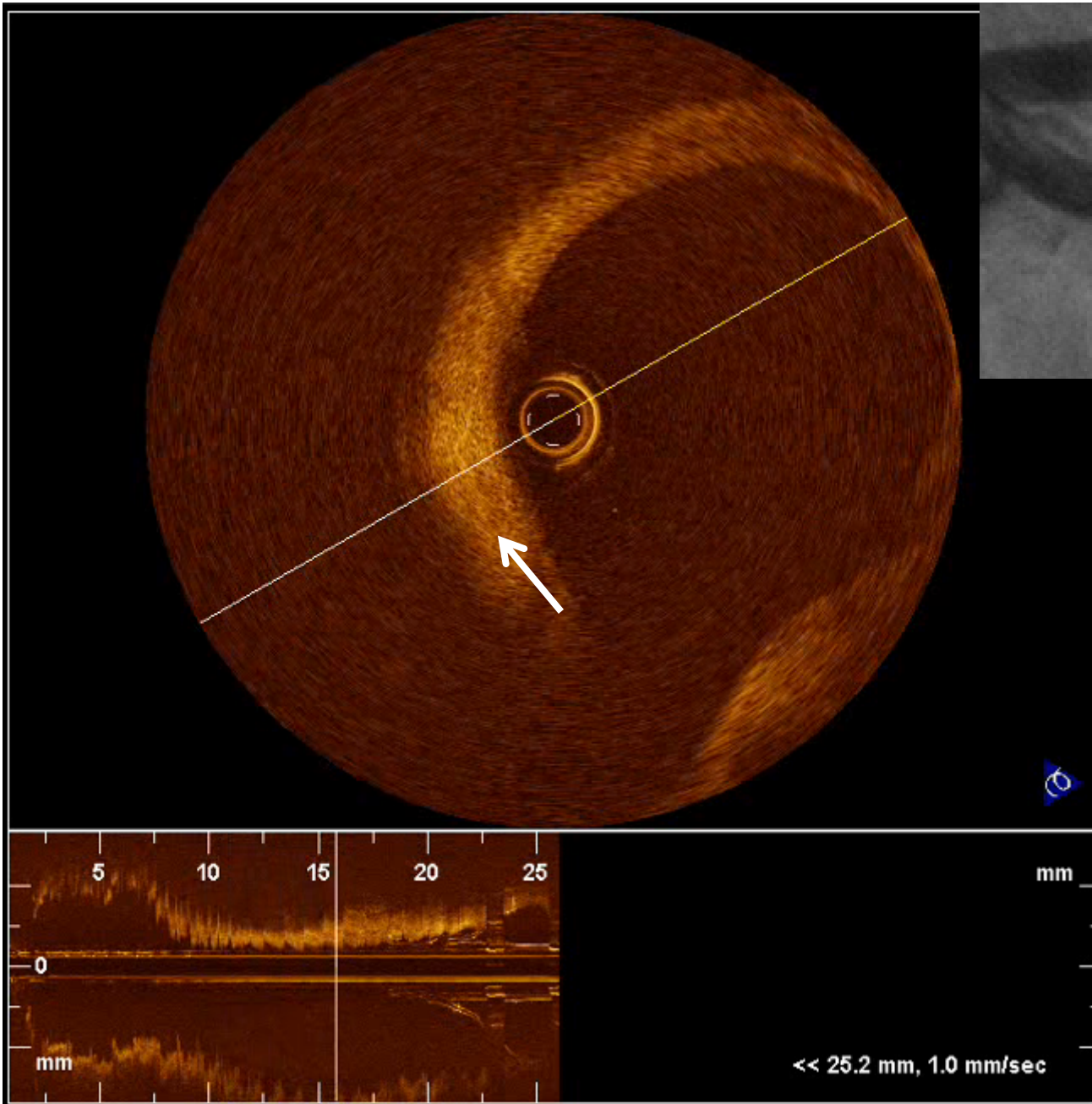


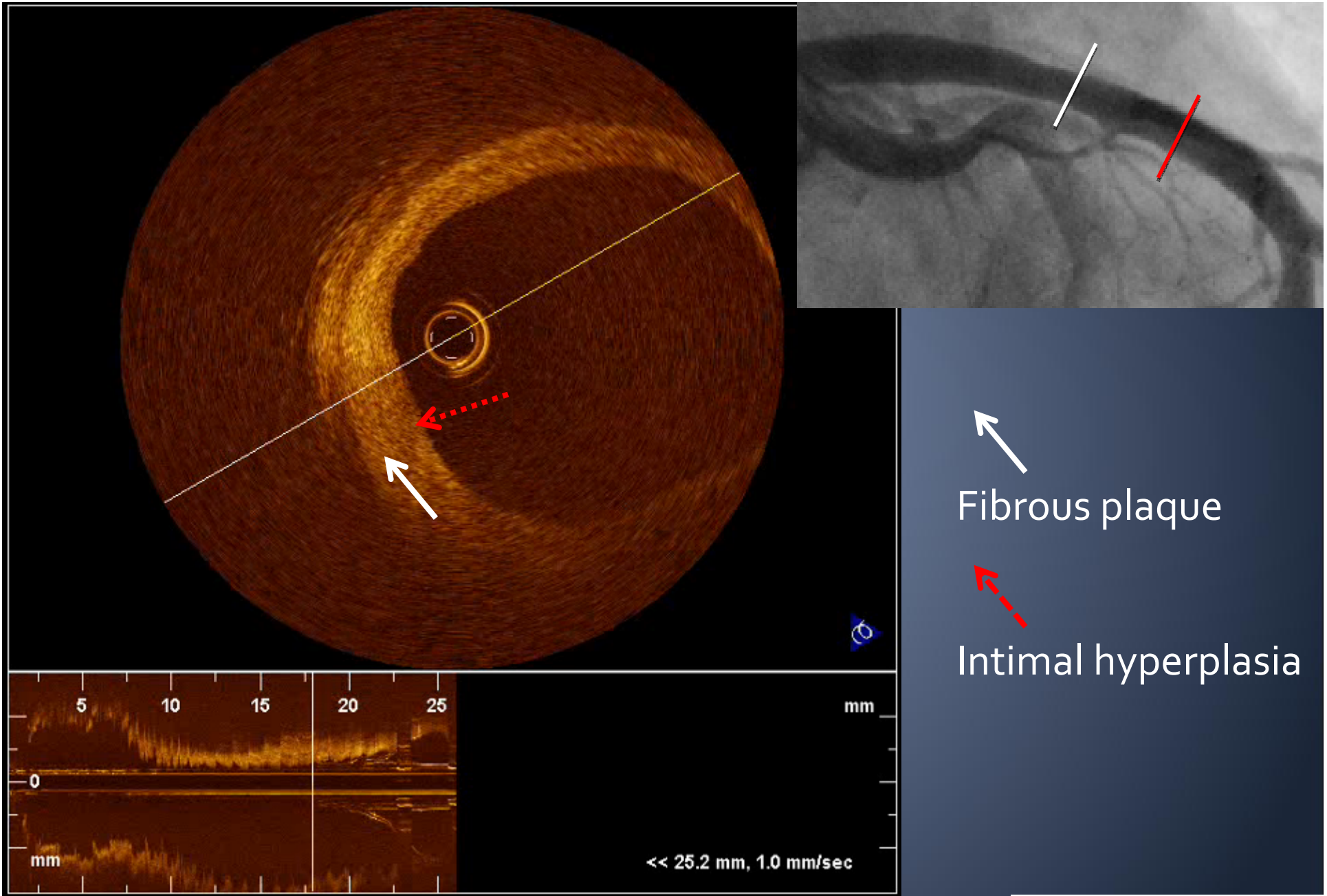
Figure 2. Grading of visibility of the lumen border in OCT imaging: good = visible on entire circumference; fair = $\geq 75\%$ of circumference; poor = $< 75\%$ of circumference. (Am J Cardiol 2008;101:562–567)

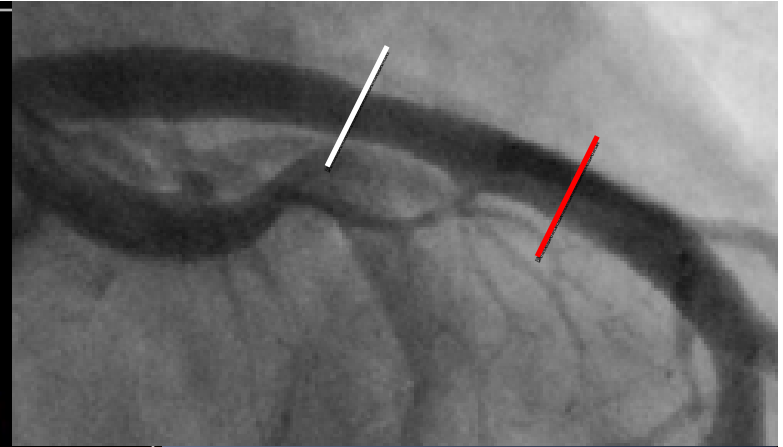
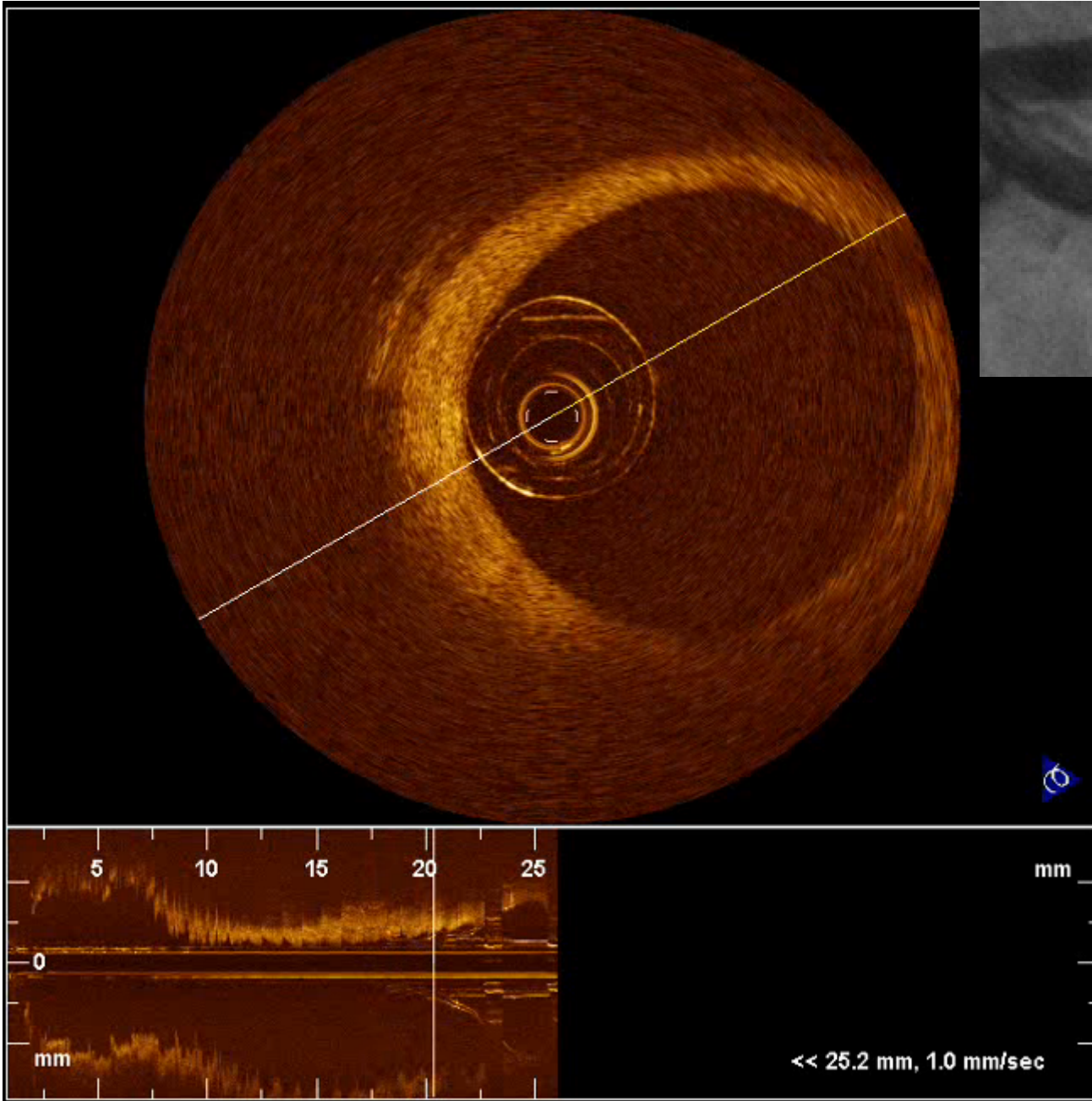




←
Fibrous plaque







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OCT findings in this lesion

Intima	plaque	
Hyperplasia	Fibrous	
Erosion	Thrombus	Calcification
Not seen	Not seen	Not seen



MORPHOLOGICAL FEATURES OF CORONARY ARTERIES IN PATIENTS WITH CORONARY SPASTIC ANGINA: ASSESSMENT WITH INTRACORONARY OPTICAL COHERENCE TOMOGRAPHY

Yoshinobu Morikawa, Shiro Uemura , Ken-ichi Ishigami, Tsunenari Soeda, Satoshi Okayama, Yasuhiro Takemoto, Kenji Onoue, Satoshi Somekawa, Taku Nishida, Yukiji Takeda, Hiroyuki Kawata, Manabu Horii, Yoshihiko Saito

International Journal of Cardiology; 2009 Aug 26

Methods

- ◆ 37 patients were finally enrolled.
- ◆ Incremental doses of ACh (10, 20, 50, 100 μ g) were injected into the coronary artery to provoke CS as described previously.



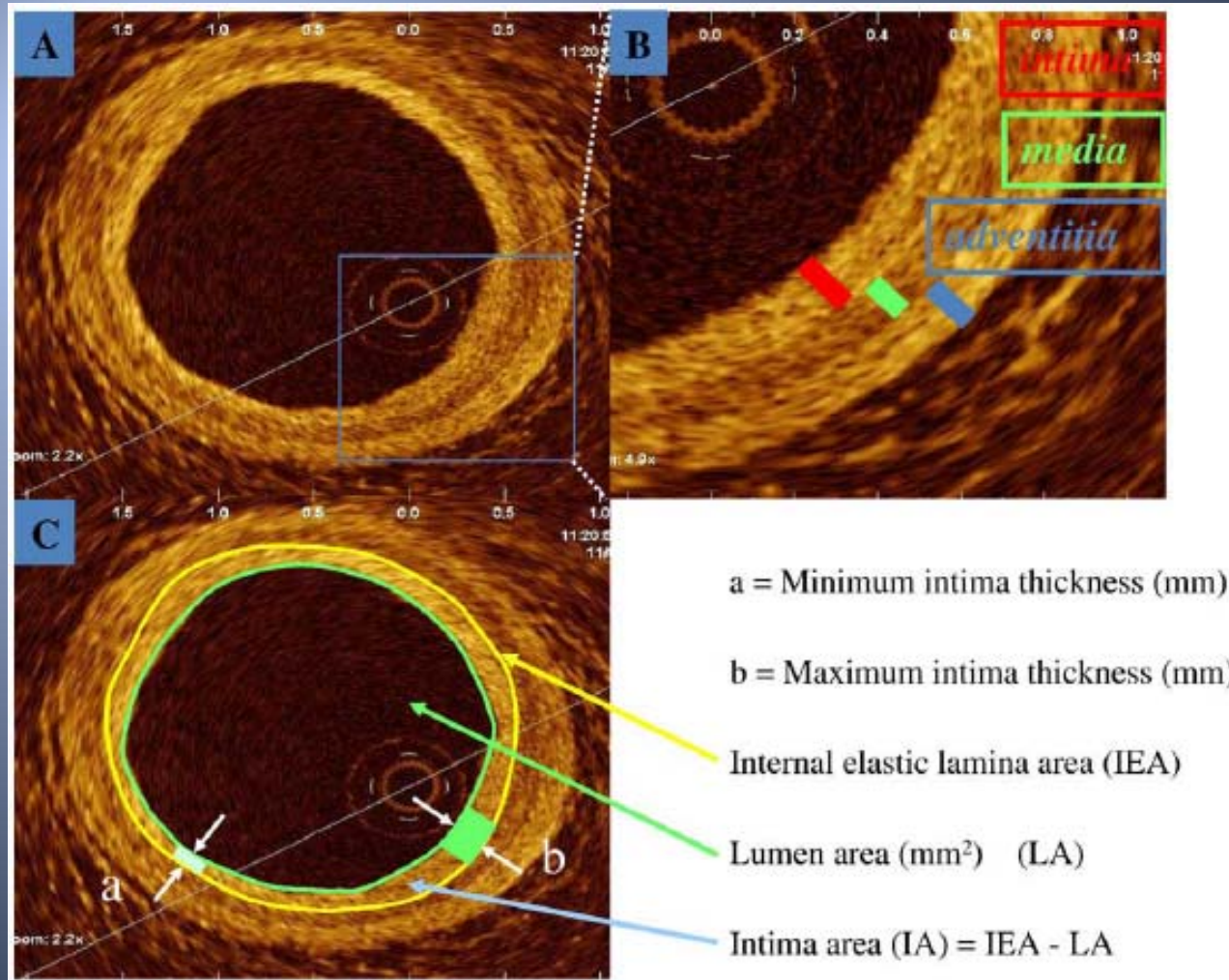
Results

Table 1
Baseline characteristics of patients.^a

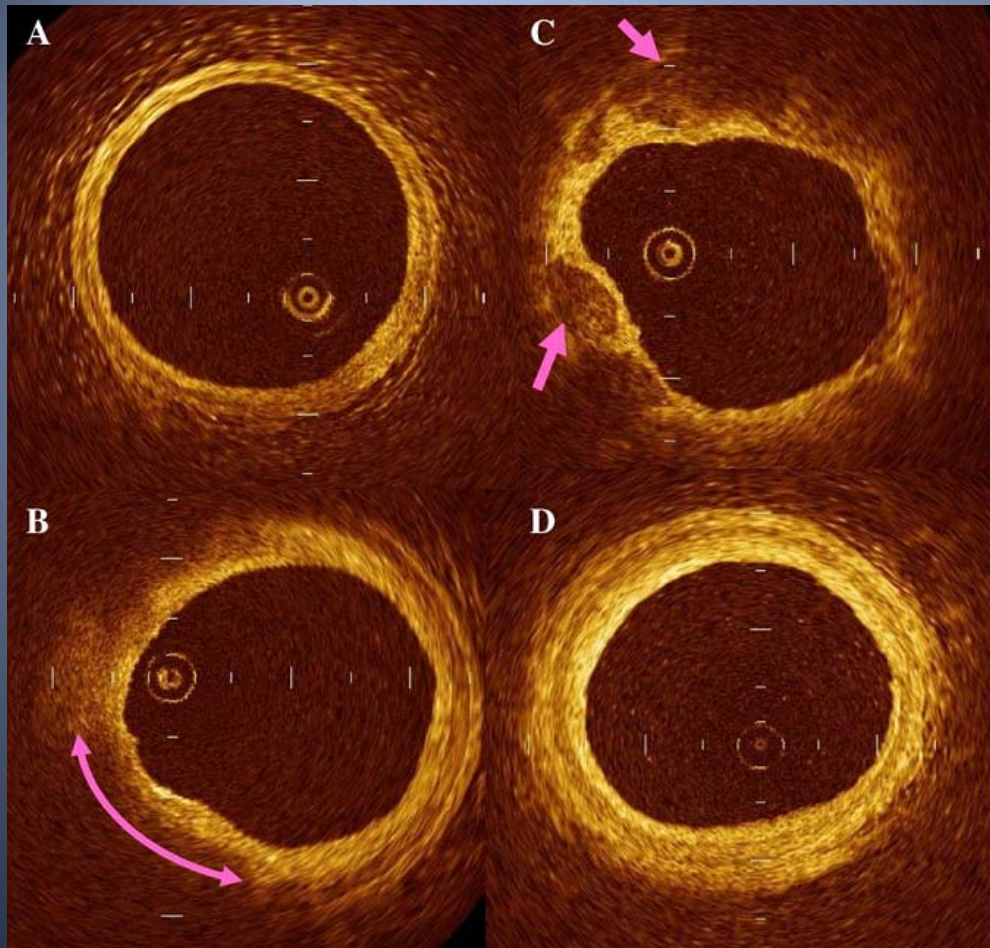
	CSA	CS	<i>p</i> Value
	Positive	Negative	
	(<i>n</i> = 23)	(<i>n</i> = 14)	
Age (years)	58.6 ± 2.8	62.8 ± 2.3	0.26
Women/men	6 / 17	6 / 8	0.29
Total cholesterol (mmol/l)	5.51 ± 0.23	5.82 ± 0.24	0.2
HDL cholesterol (mmol/l)	1.35 ± 0.09	1.53 ± 0.11	0.17
LDL cholesterol (mmol/l)	3.30 ± 0.15	3.59 ± 0.16	0.18
Triglycerides (mmol/l)	1.83 ± 0.20	1.46 ± 0.18	0.23
Body Mass Index (kg/m ²) ^b	25.9 ± 0.7	25.3 ± 1.2	0.76
Hypertension (%)	12 (52%)	11 (79%)	0.13
Diabetes mellitus (%)	6 (26%)	4 (29%)	0.76
Current smoker (%)	6 (26%)	0 (0%)	0.04



OCT image



Results



A: Coronary segment in a CS negative patient

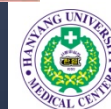
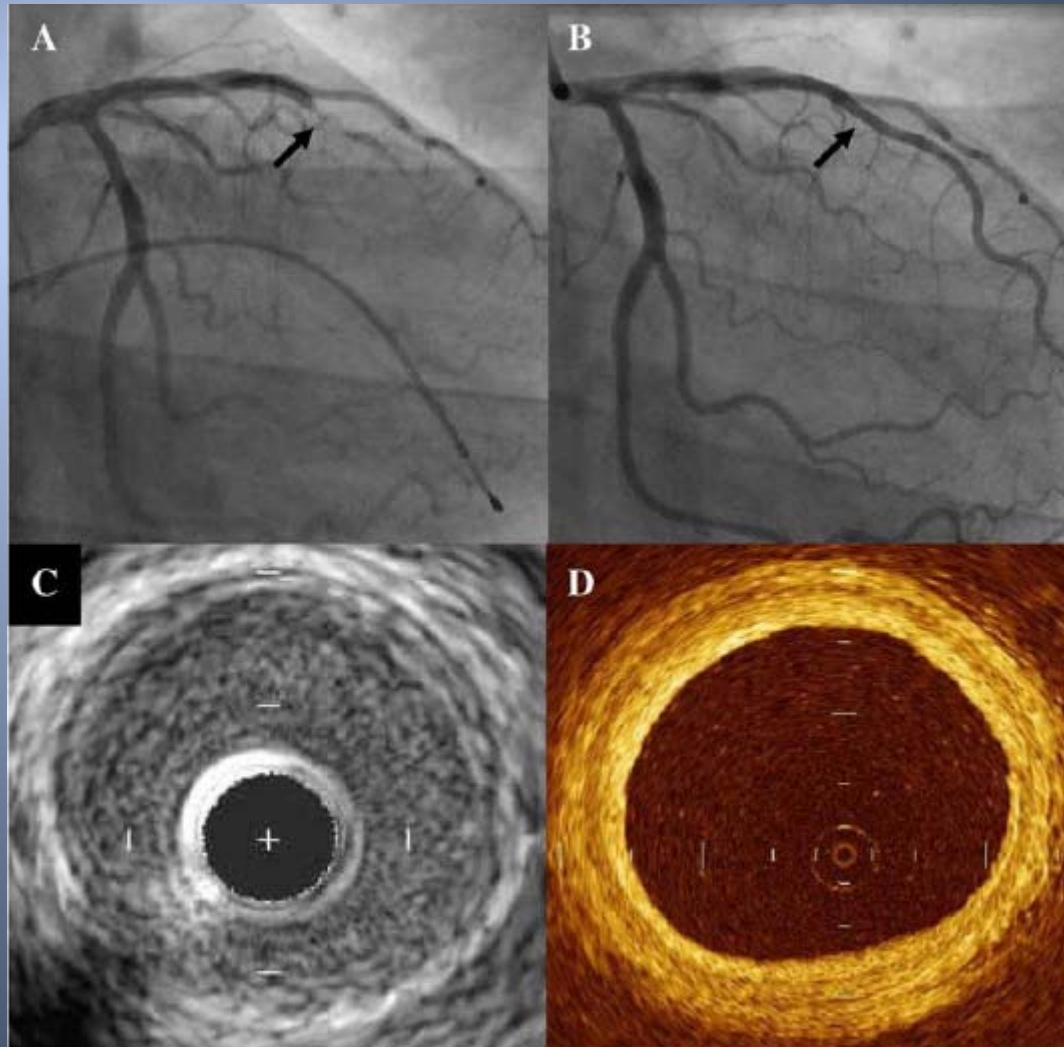
B: Coronary segment in a CS-negative patient, showing lipid accumulation (curved line) in the coronary intima.

C: Coronary segment in a CS-negative patient, showing calcification

D: Coronary segment in a CSA patient showing diffuse intimal thickening



Results



HYUH GURI spasm study

Case	Plaque	Erosion	Intimal tear	Intimal hyperplasia
1	Fibrous	+	+	+
2	Lipid- rich	+	+	+
3				+
4		+		+
5		+		+
6	Lipid-rich	+	+	+
7	Fibrous	+	+	+
8		+		+
9				+
10				+



Conclusion

- ◆ High-resolution coronary OCT imaging can make it possible to analyze the vascular pathophysiology in patients with spastic angina.



Thank you for your attention !



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