

# **Mismatched Disease** **: "Do You Want to Treat the Lesion or the Patient?"**

***Bong-Ki Lee, MD, PhD***

**Division of Cardiology**  
**Kangwon National University Hospital**  
***Chunchon, Korea***

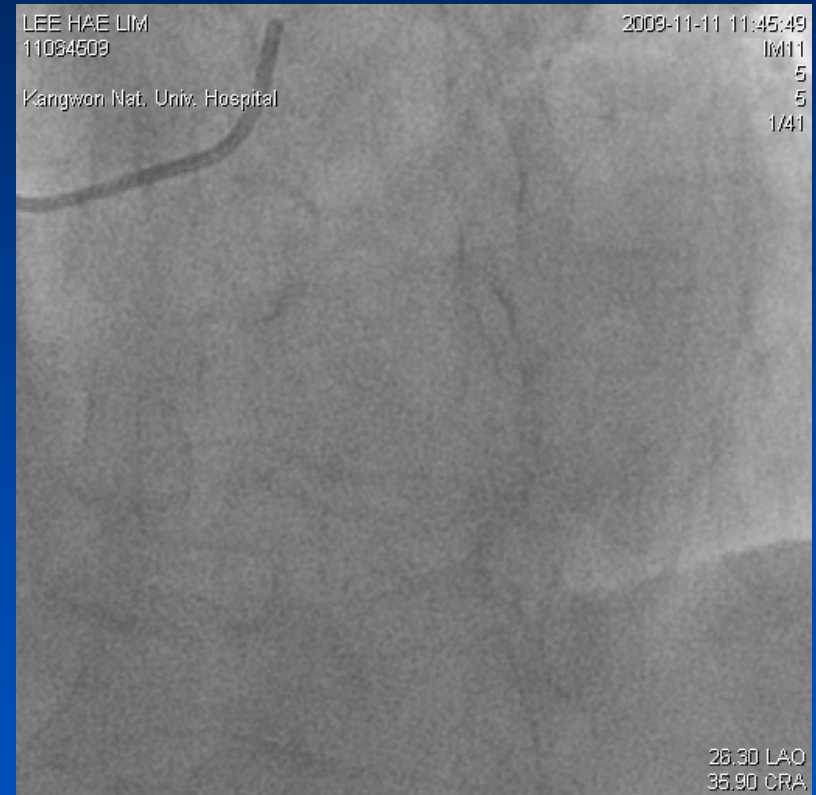
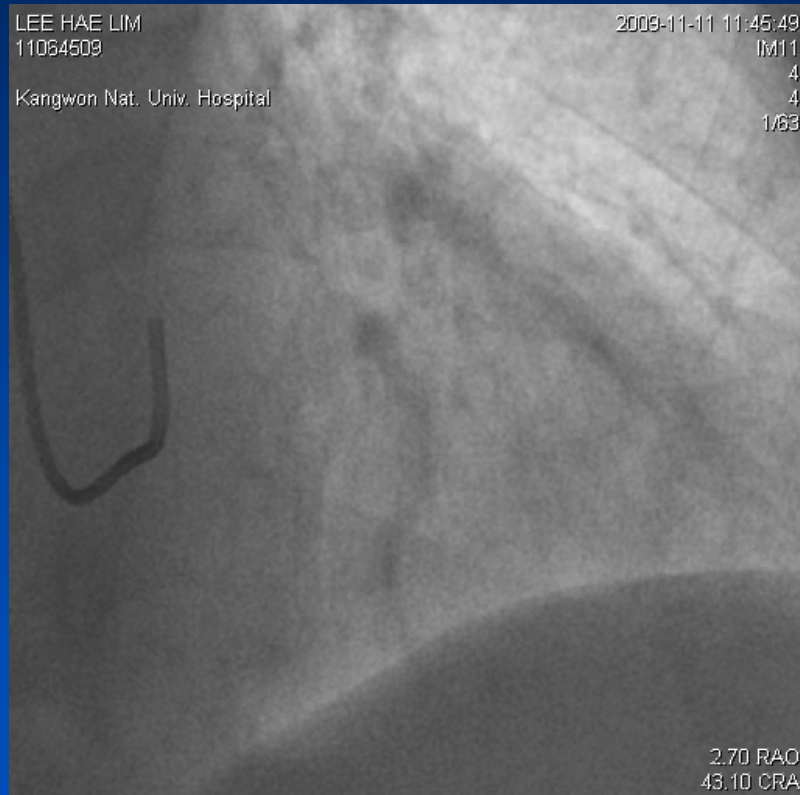
1

# Case #1

- 78/F
- CC: effort angina x 1 month (1 yr ago)
- Risk factors: old age
- Treadmill test
  - not performed for s/p THR (Lt hip)

# Coronary angiogram

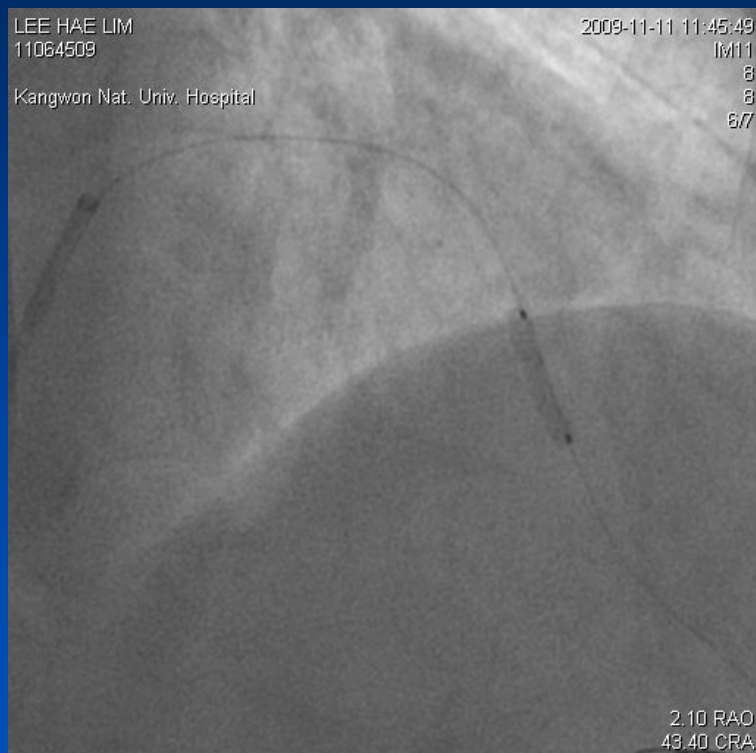
## 11 Nov, 2009



# PCI

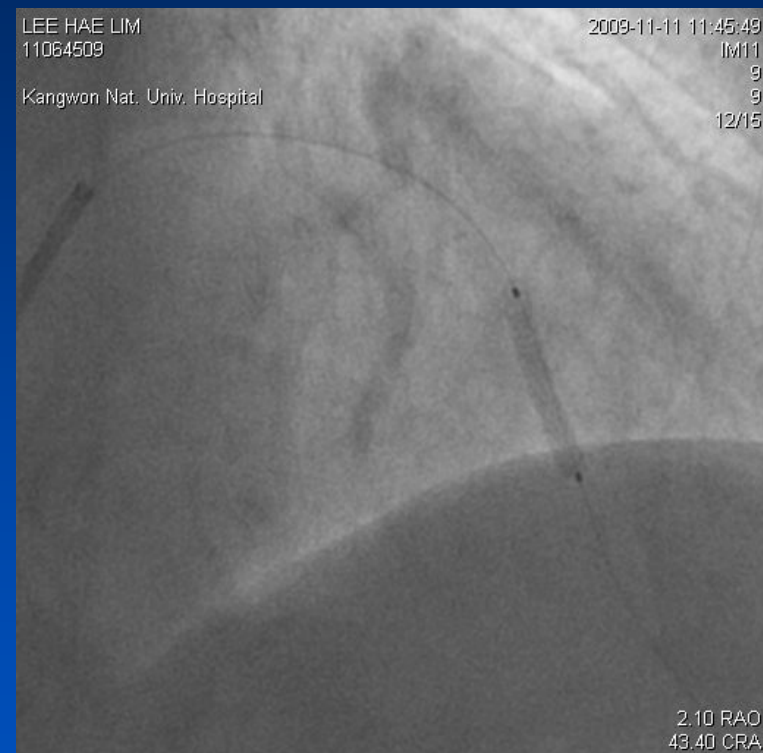
## 11 Nov, 2009

### Pre-dilatation



Sapphire 3.0 x 15 mm (6 atm)

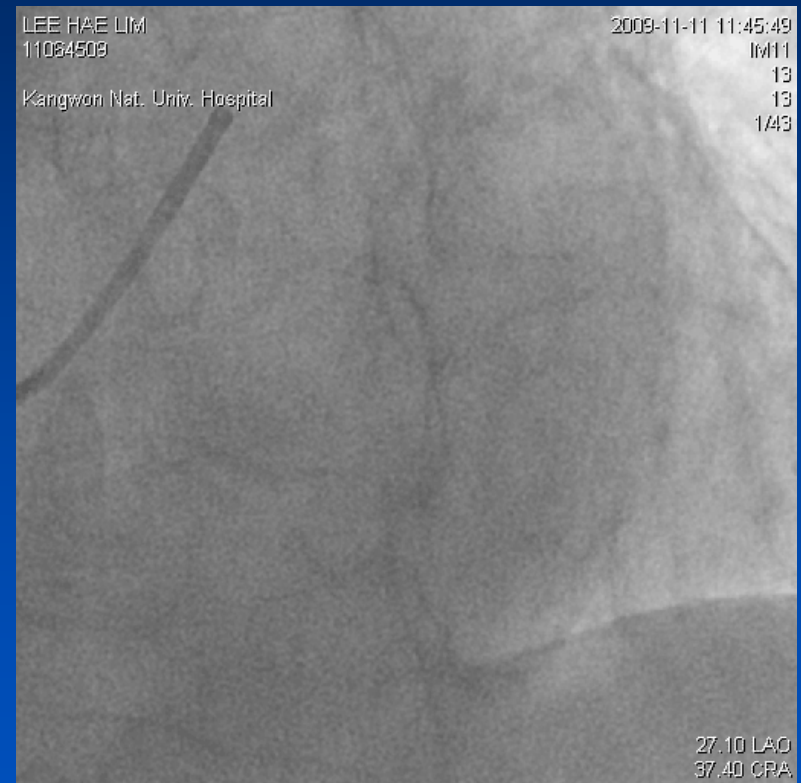
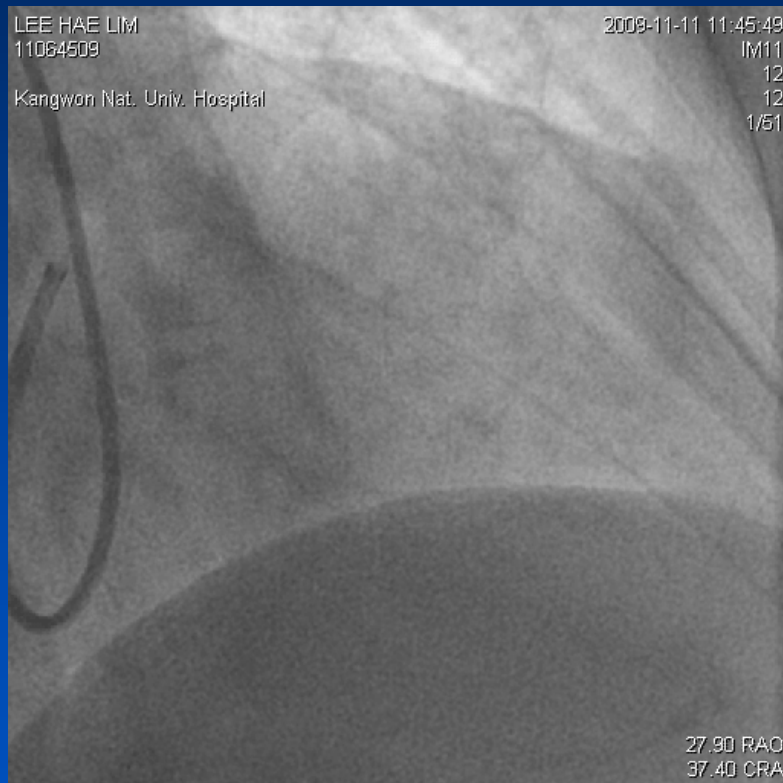
### Stenting



PICO-Elite 3.0 x 18 mm (12 atm)

# Final CAG

## Successful result

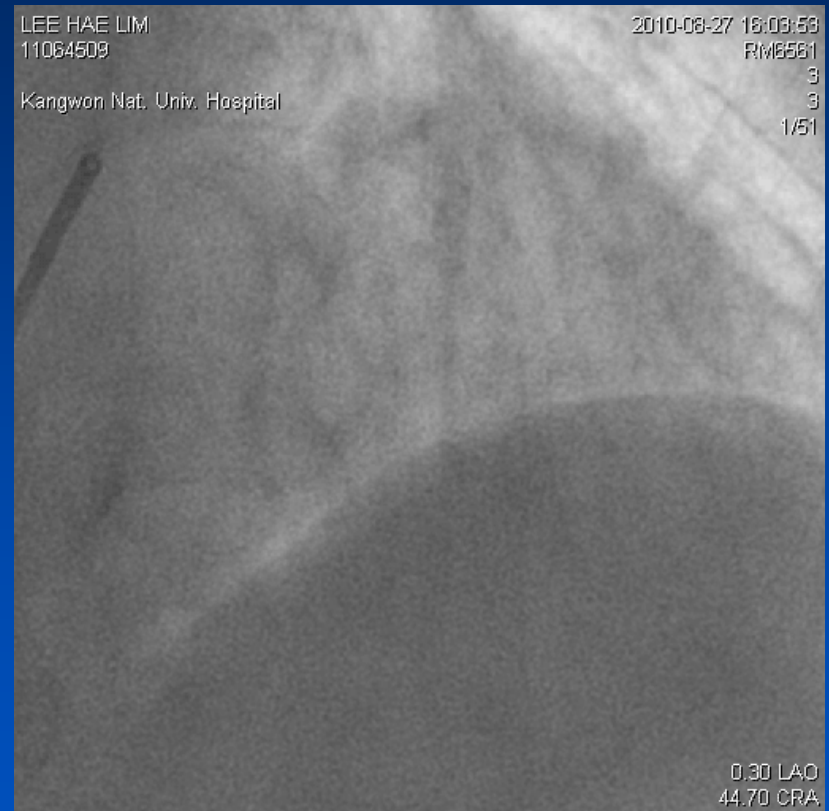
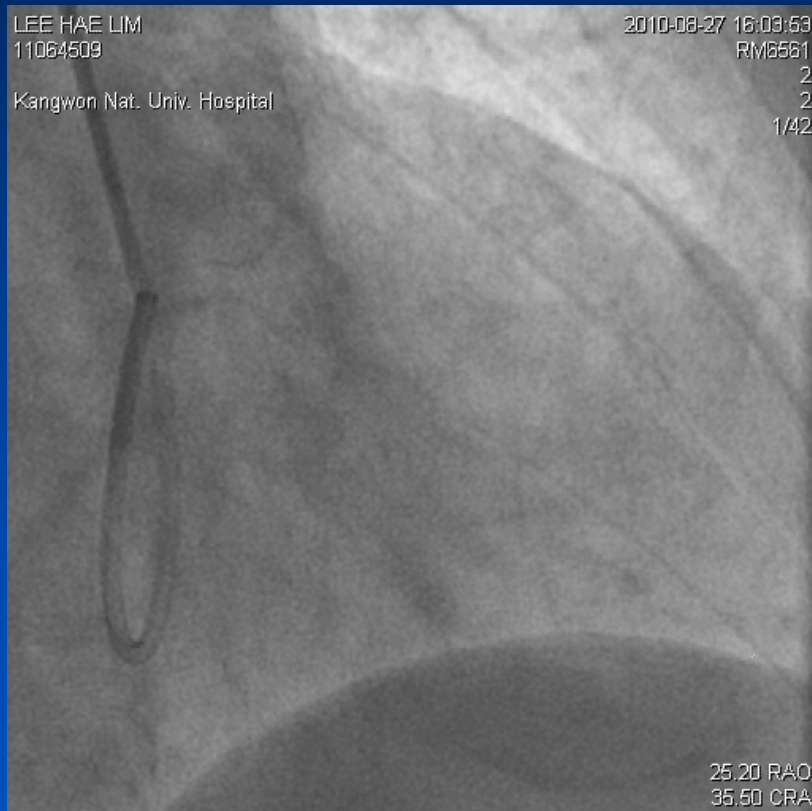


## 8 months later...

- She complained recurred chest pain, but the pain character was atypical.
- We performed follow up CAG.

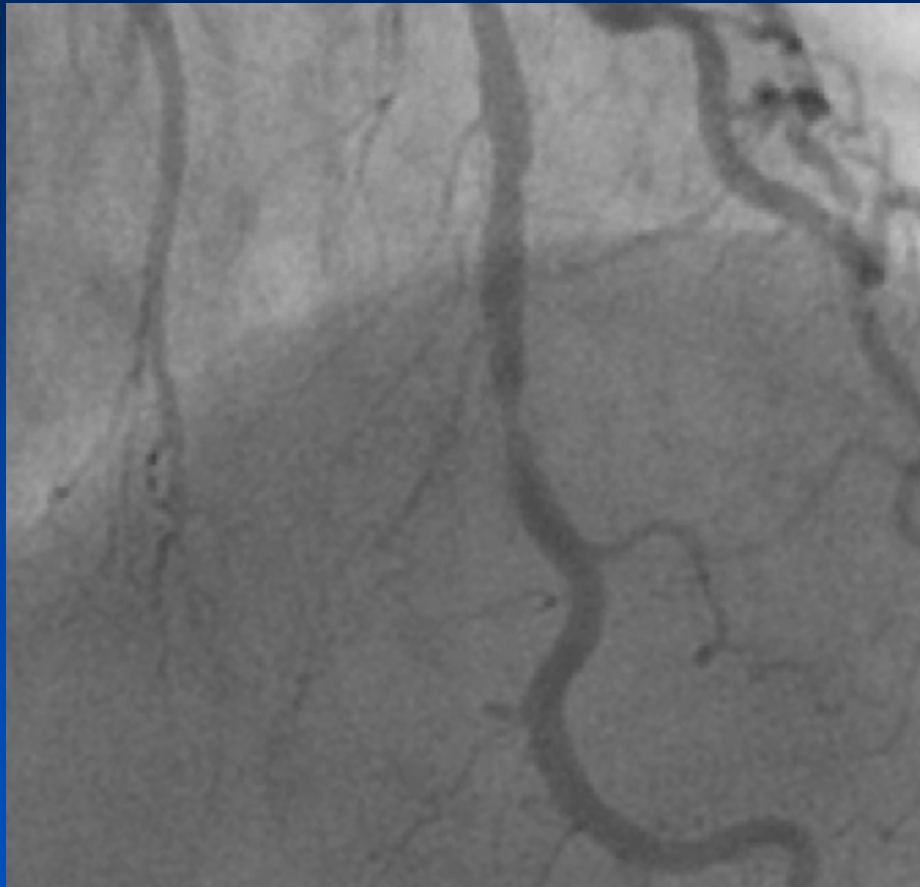
# F/U Coronary angiogram

## 27 Aug, 2010

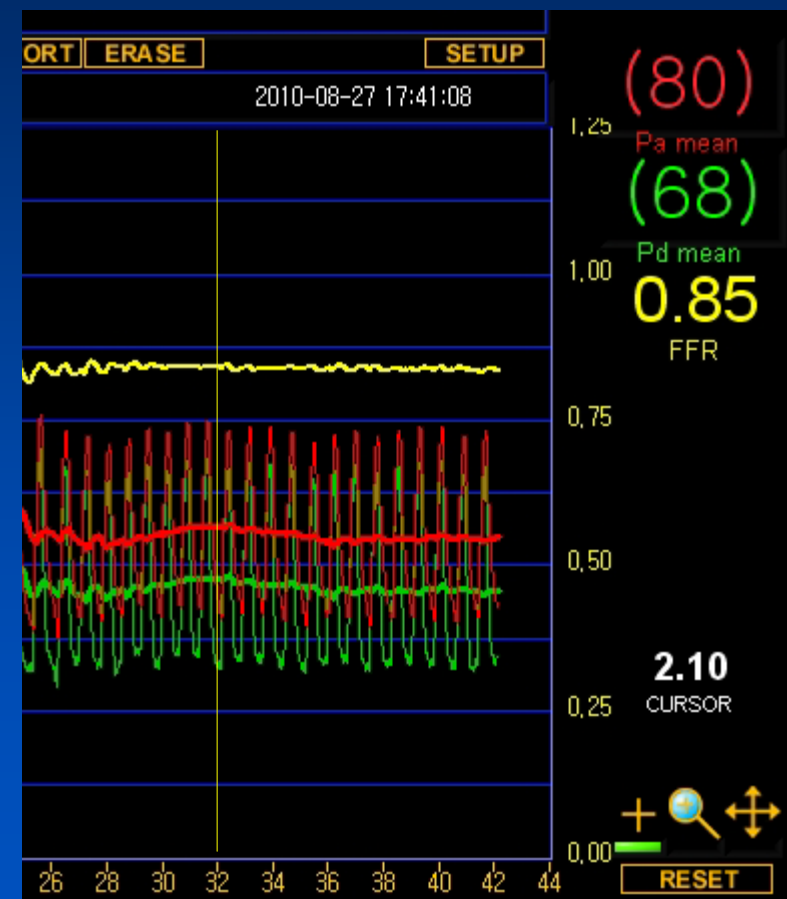




# We measured FFR



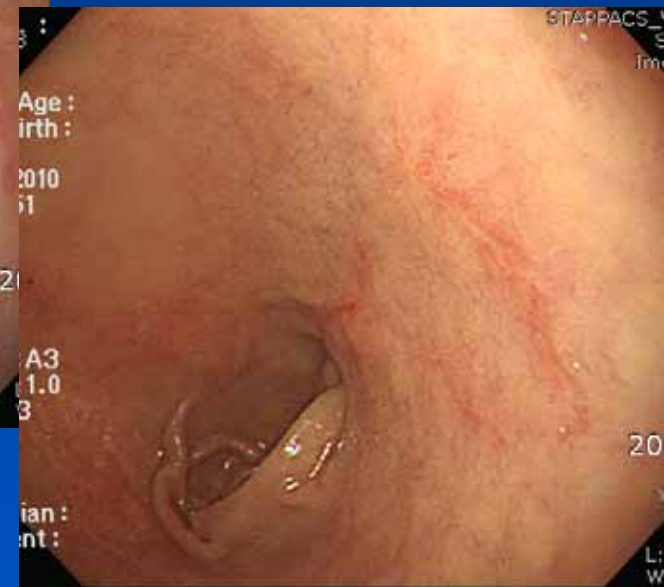
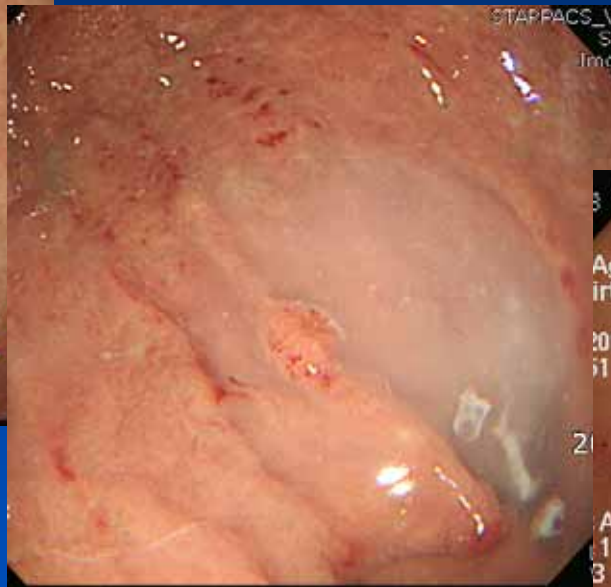
Then, deferred PCI...





# Endoscopy

## Erosive gastritis & duodenal ulcers



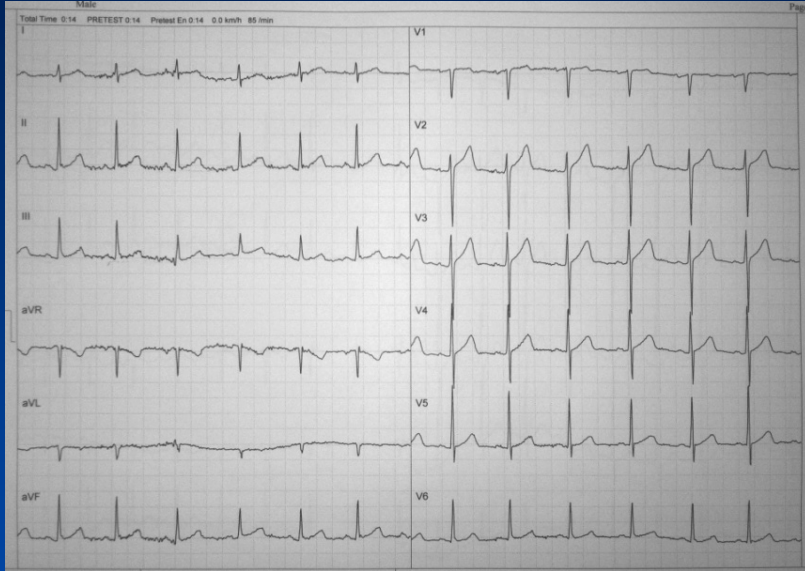
# GI medication started

- Then the ‘chest pain’ had been improved.

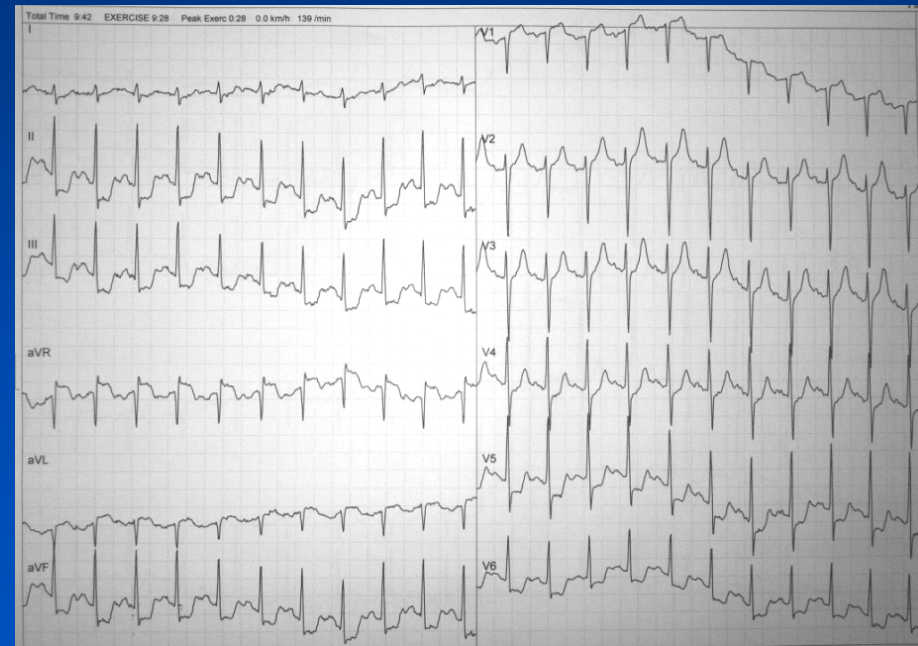
## Case #2

- 58/F
- CC: effort angina x 3 weeks
- Risk factors: Hypertension, T2DM
- Treadmill test
  - Positive at stage 3

# Treadmill test



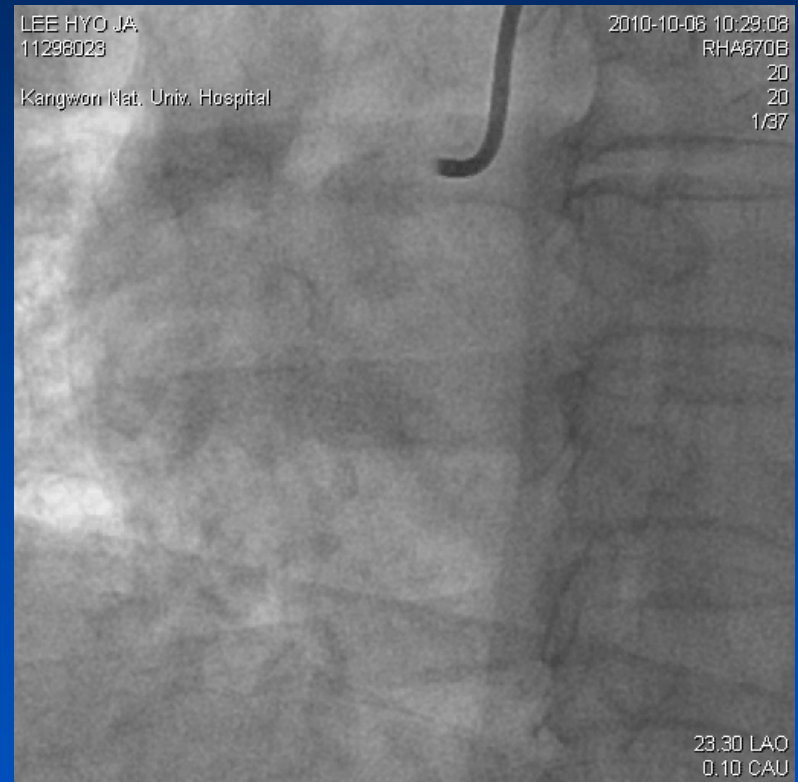
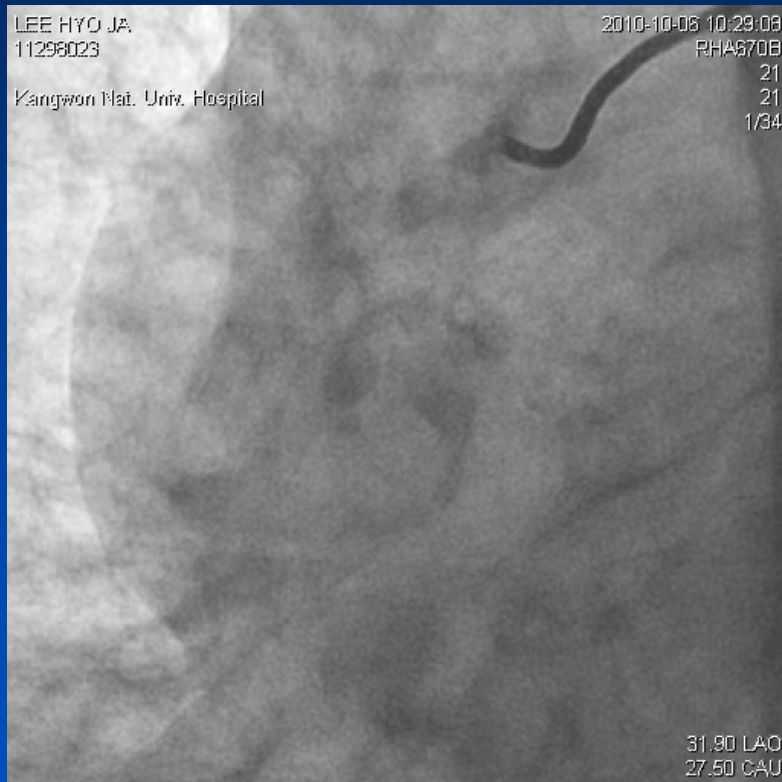
Baseline



Angina at stage 3

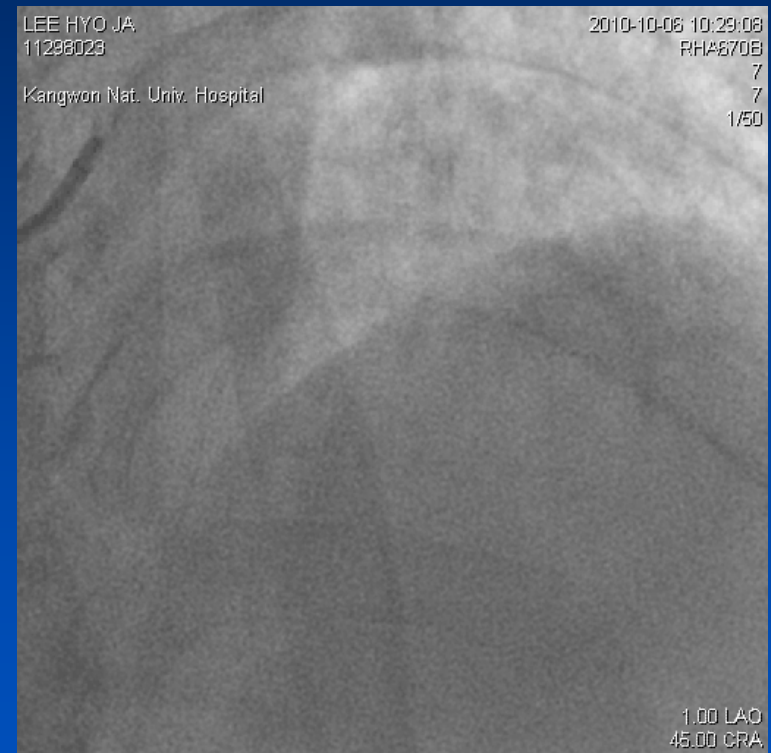
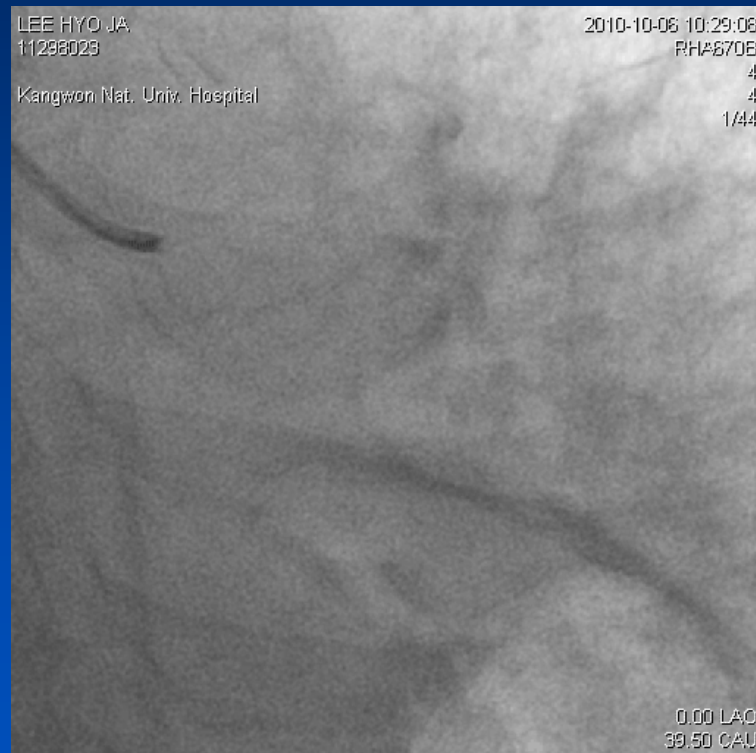
# Coronary angiogram

## RCA



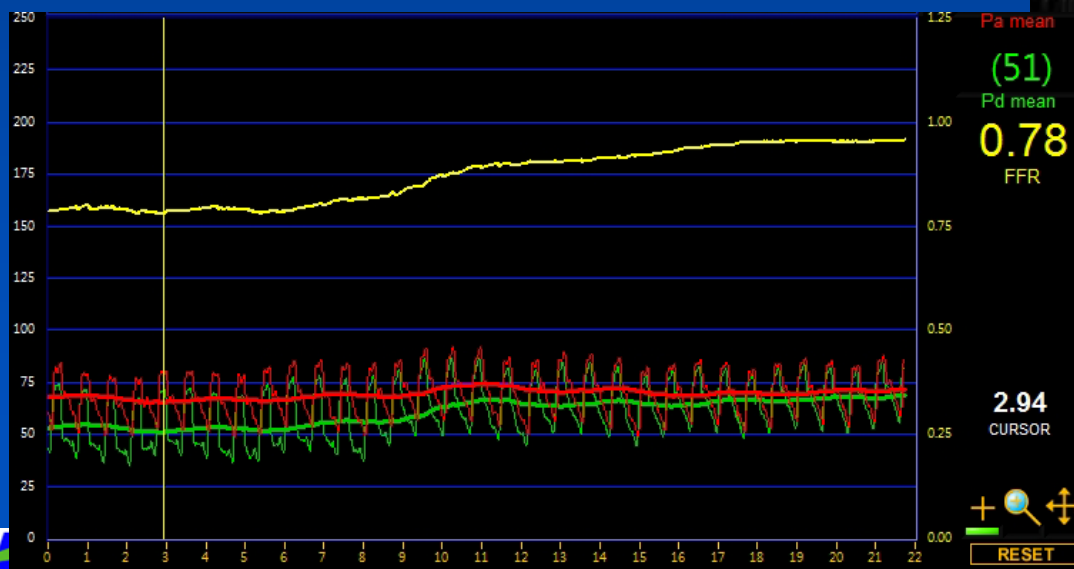
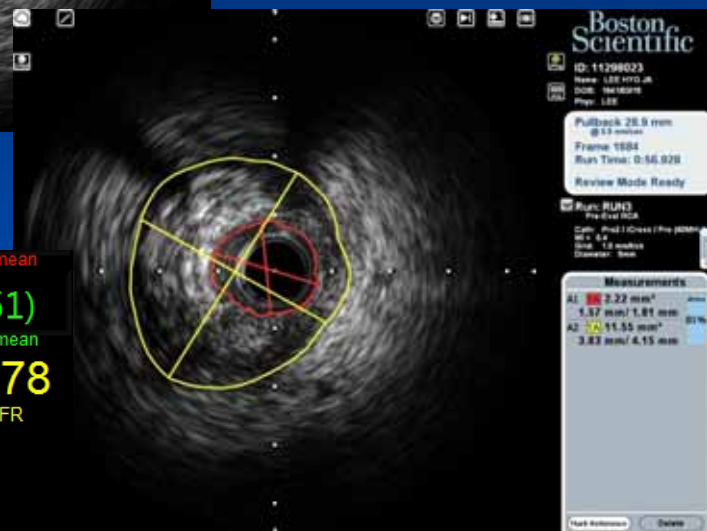
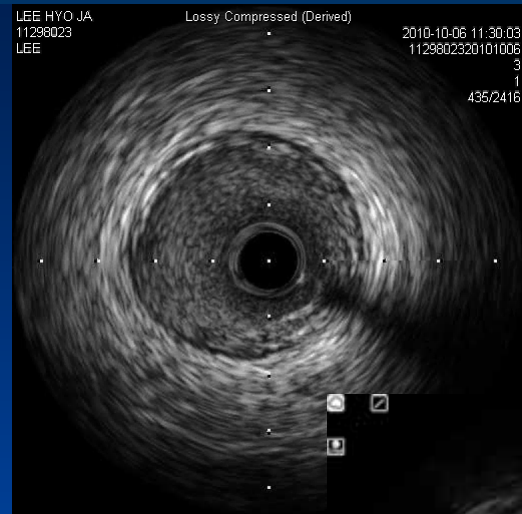
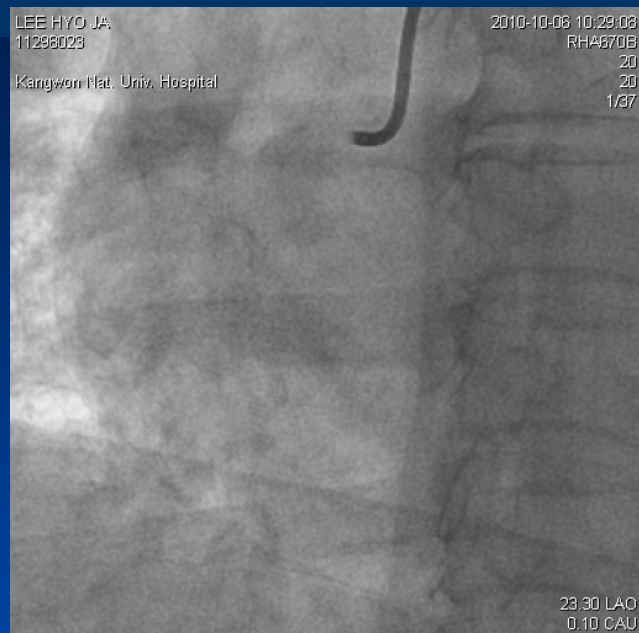
# Coronary angiogram

## Left coronary system





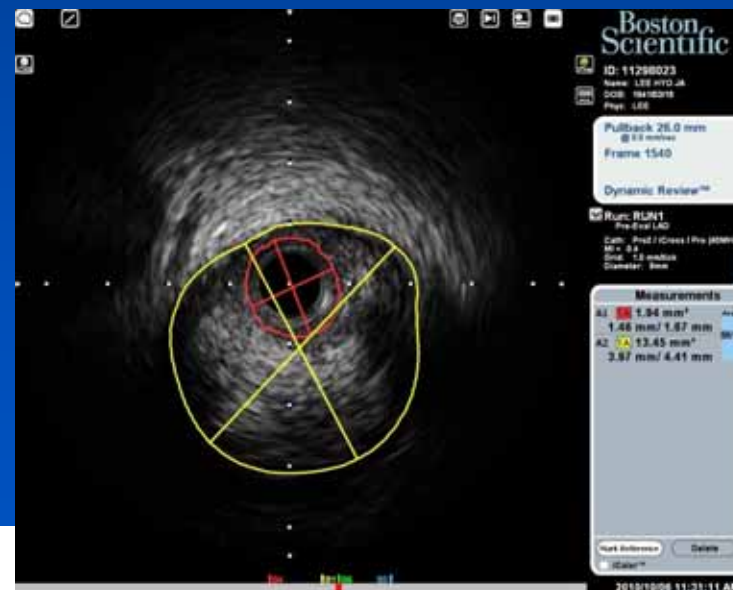
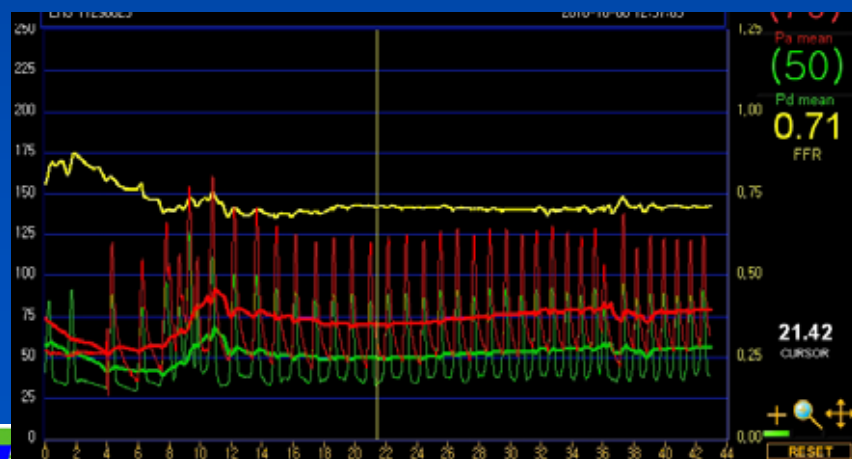
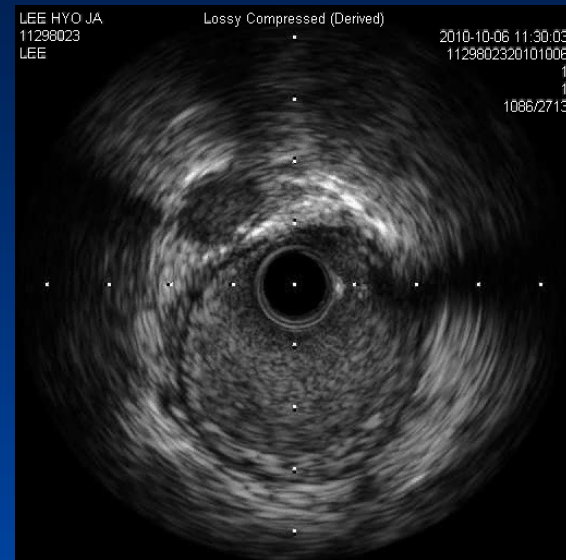
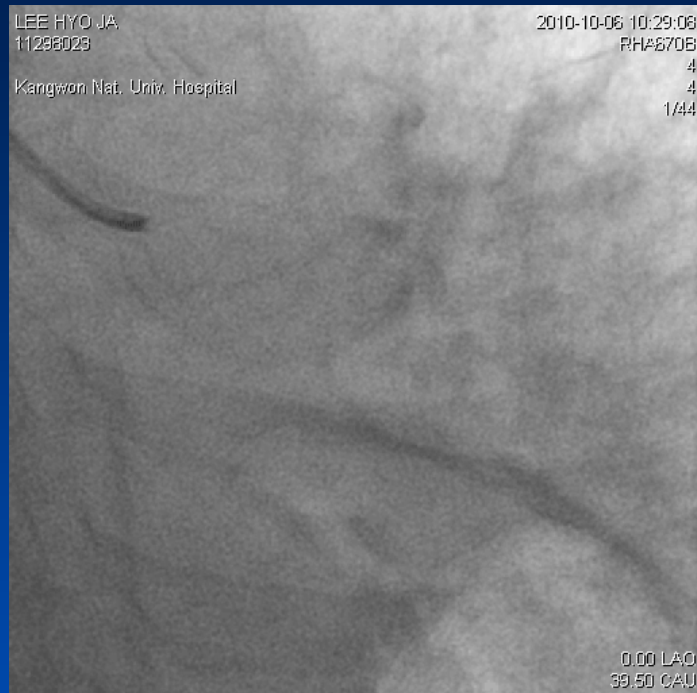
# IVUS & FFR for RCA lesion



➡ Deferred!

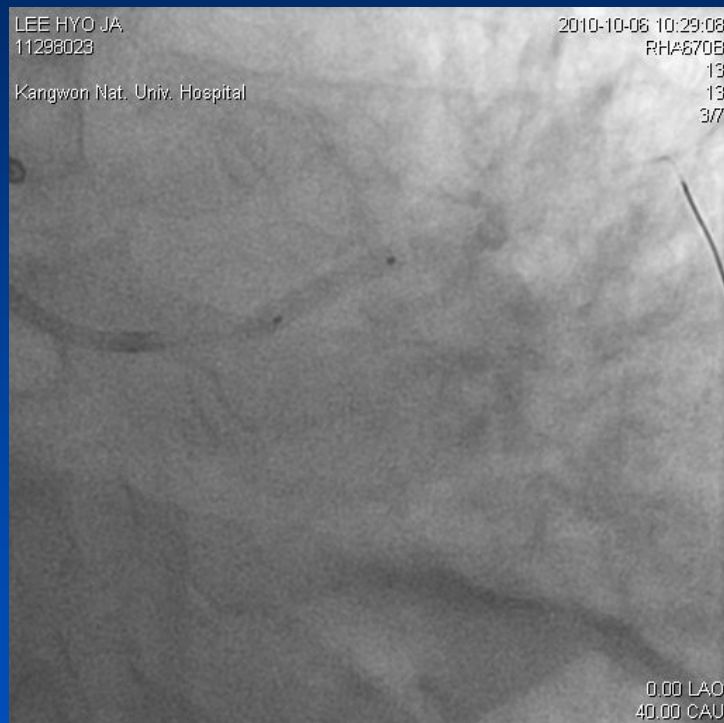


# IVUS & FFR for LAD lesion



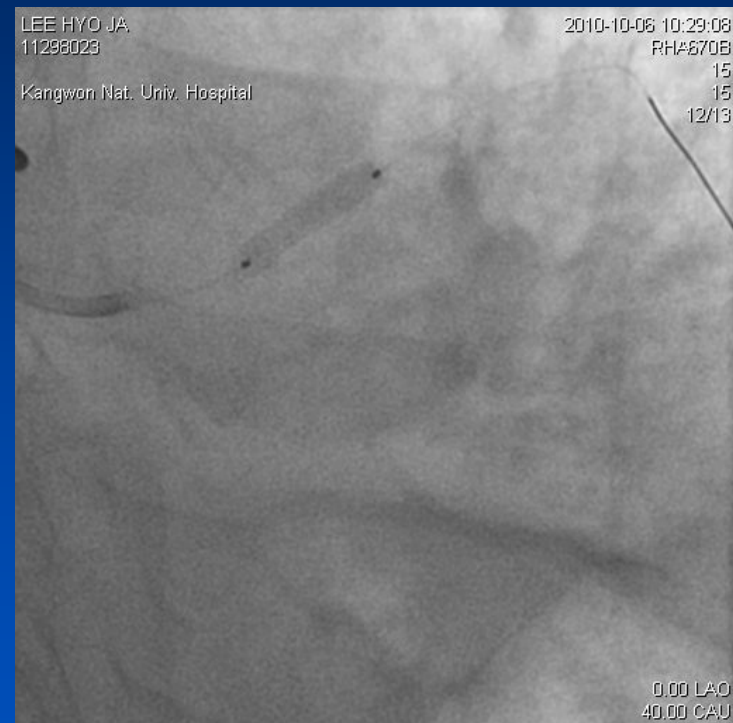
# PCI for LAD Lesion

## Pre-dilatation



Sapphire 3.0 x 15 mm (6 atm)

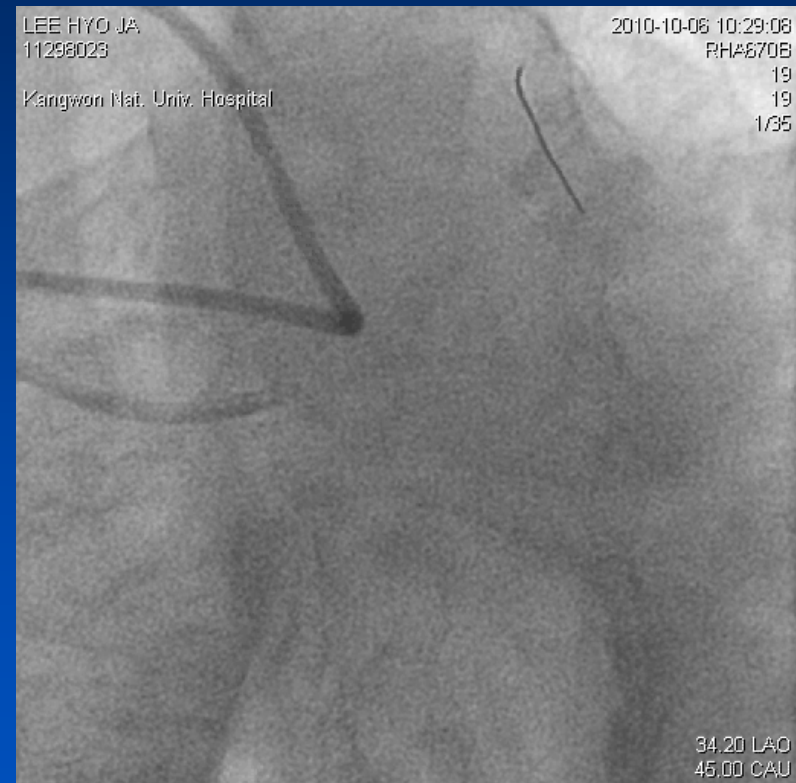
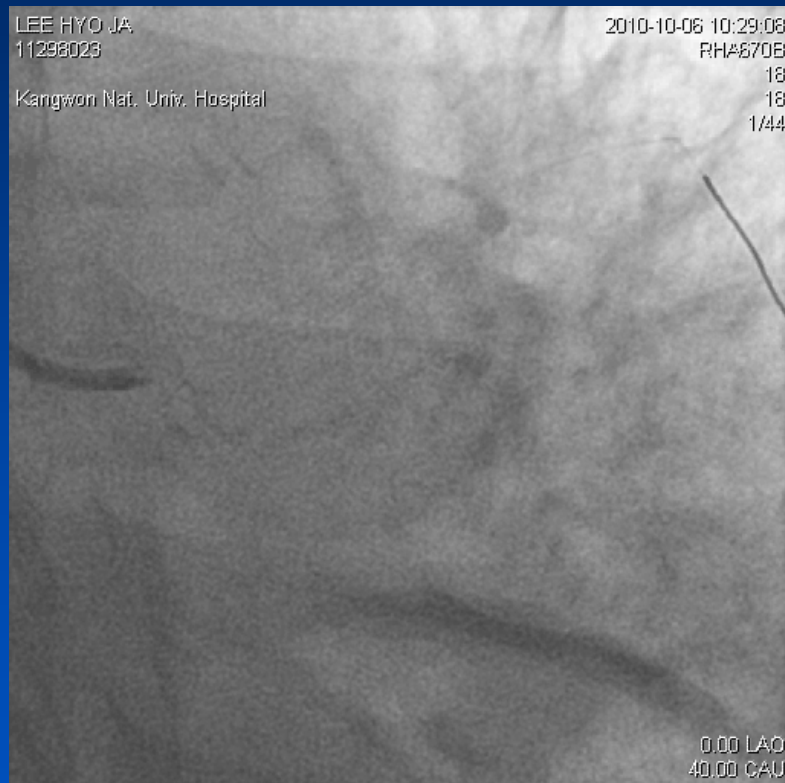
## Stenting



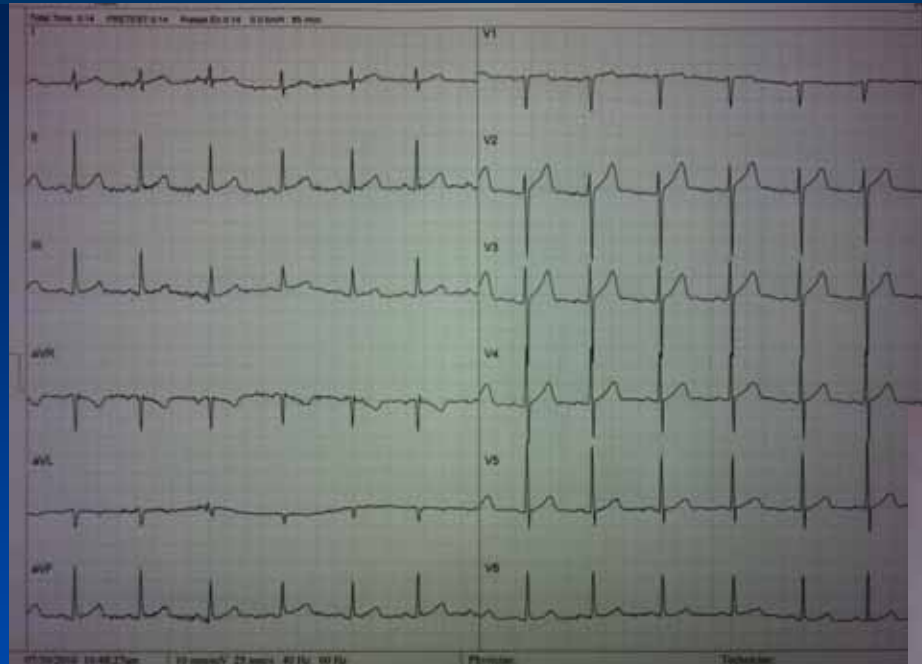
PICO-Elite 3.0 x 18 mm (12 atm)

# Final CAG

## Successful result

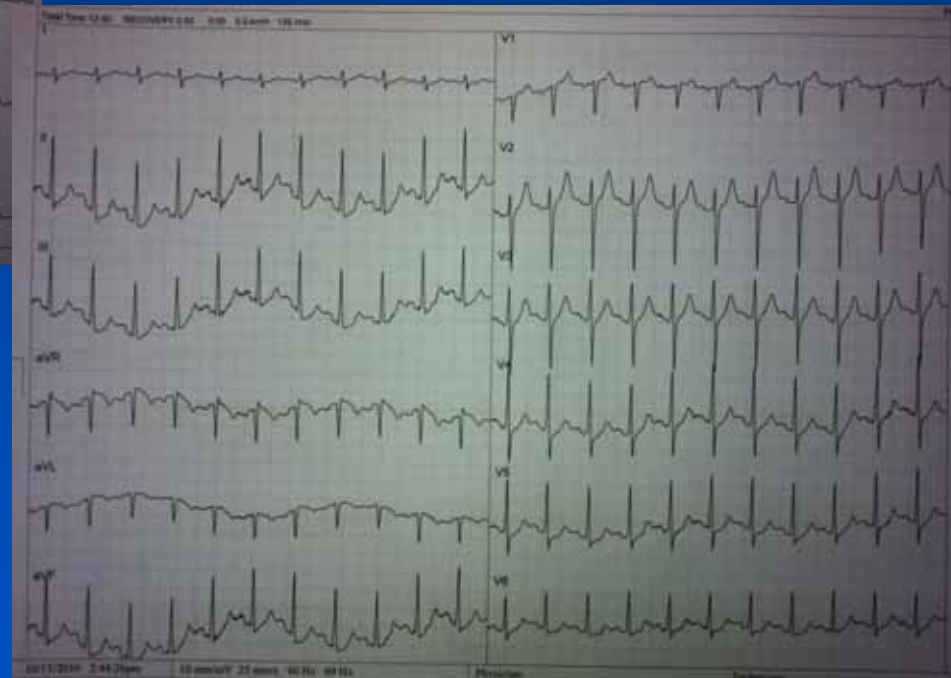


# Treadmill test follow up



Baseline

Stage 4



# If I Did “Unnecessary PCI”.....

- **Might experienced PCI related complications**
  - Restenosis
  - Stent thrombosis
  - No-reflow
  - Coronary perforation
  - Access site complication
- **Anti-platelet therapy must be reinforced**
- **The patient must paid more money...**

# Summary & Conclusion

- FFR can be useful as an alternative to stress test in the cath lab to have decision making-treat or not treat.
- “Start the procedure with FFR, finish the procedure with IVUS” rule seems quite feasible.
- FFR is a useful tool to avoid “unnecessary PCI”.



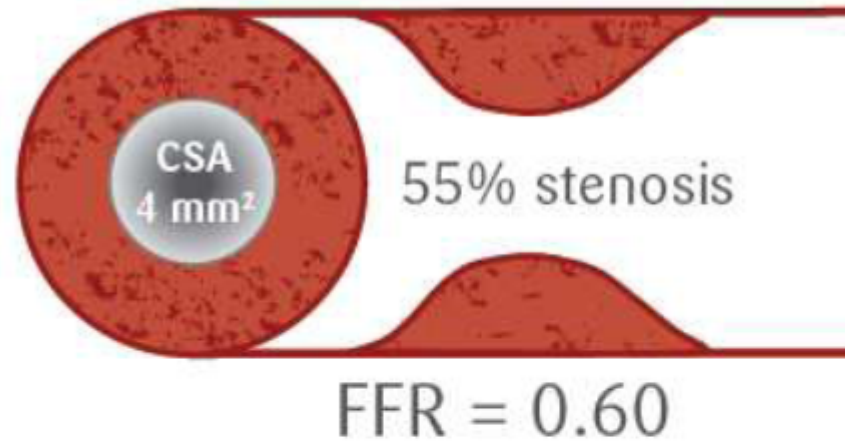
Thank You!







**4 MM<sup>2</sup> TOO SMALL?**



**4 MM<sup>2</sup> SUFFICIENT?**



# IVUS cutoff Value

## Published Data Review

	Nishioka T, JACC 1999	Briguori et al AJC 2001	Takaki et al Cir. 1999	Abizaid et al AJC 1998
	70 lesions	53 lesions	42 pts	86 pts
<b>Cut-off of MLA (mm<sup>2</sup>)</b>	<b>&lt;4.0 (Thallium +)</b>	<b>&lt; 4.0 (FFR&lt;0.75)</b>	<b>&lt;3.0 (FFR&lt;0.75)</b>	<b>&gt; 4.0 (CFR &gt;2.0)</b>
<b>Sensitivity</b>	80%	92%	83 %	Accuracy
<b>Specificity</b>	90%	54%	92.3 %	92%
<b>QCA VD (mm)</b>		3.08±0.3		
<b>DS (%)</b>		52±11		
<b>MLA (mm<sup>2</sup>)</b>	3.3±2.3	3.9±2.5	3.9±2.0	4.4±2.0
<b>MVA (mm<sup>2</sup>)</b>		12.0±4.6		13.2±4.4
<b>Area stenosis%</b>		65±18	55±24	43±24

# New Cut-off Value of IVUS MLA (mm<sup>2</sup>) according to different Vessel Diameter

	FFR <0.8/>0.8	Cut-off	sensitivity	specificity	PPV	NPV	Accuracy	AUC	95%CI
Vessel diameter at the MLA site <3.0mm (n=38)									
MLA	7/31	1.45	71	77.4	42	92	76	0.730	0.562-0.861
Length	7/31	12.0	57	83	44	90	78	0.682	0.511-0.823
PB	7/31	75.4	43	94	60	88	85	0.654	0.483-0.801
Area stenosis	7/31	66.8	86	52	28	94	56	0.696	0.526-0.834
Vessel diameter at the MLA site 3.0-3.5mm (n=53)									
MLA	13/40	1.8	61.5	87.5	61	88	81	0.769	0.633-0.874
Length	13/40	4.9	72.5	84	94	50	80	0.772	0.636-0.876
PB	13/40	74.5	84.6	67.5	46	92	74	0.765	0.629-0.871
Area stenosis	13/40	75.8	46						0.528-0.794
Vessel diameter at the MLA site 3.5-4.0mm (n=72)									
MLA	18/54	2.15	83						0.736-0.917
Length	18/54	3.57	83	75	54	93	77	0.813	0.704-0.895
PB	18/54	80.2	83	75	54	93	77	0.850	0.746-0.923
Area stenosis	18/54	70.0	89	72	52	95	76	0.824	0.716-0.904
Vessel diameter at the MLA site >4.0mm (n=73)									
MLA	11/62	2.41	91	83	50	98	84	0.874	0.775-0.940
Length	11/62	0.83	91	72.6	37	98	75	0.792	0.682-0.879
PB	11/62	80.7	100	61	31	100	67	0.855	0.753-0.926
Area stenosis	11/62	79.3	55	95	67	92	89	0.770	0.656-0.860

**2.15 mm<sup>2</sup>**