



THE CATHOLIC UNIVERSITY OF KOREA  
SEOUL ST. MARY'S HOSPITAL

# **DEB in SVGD**

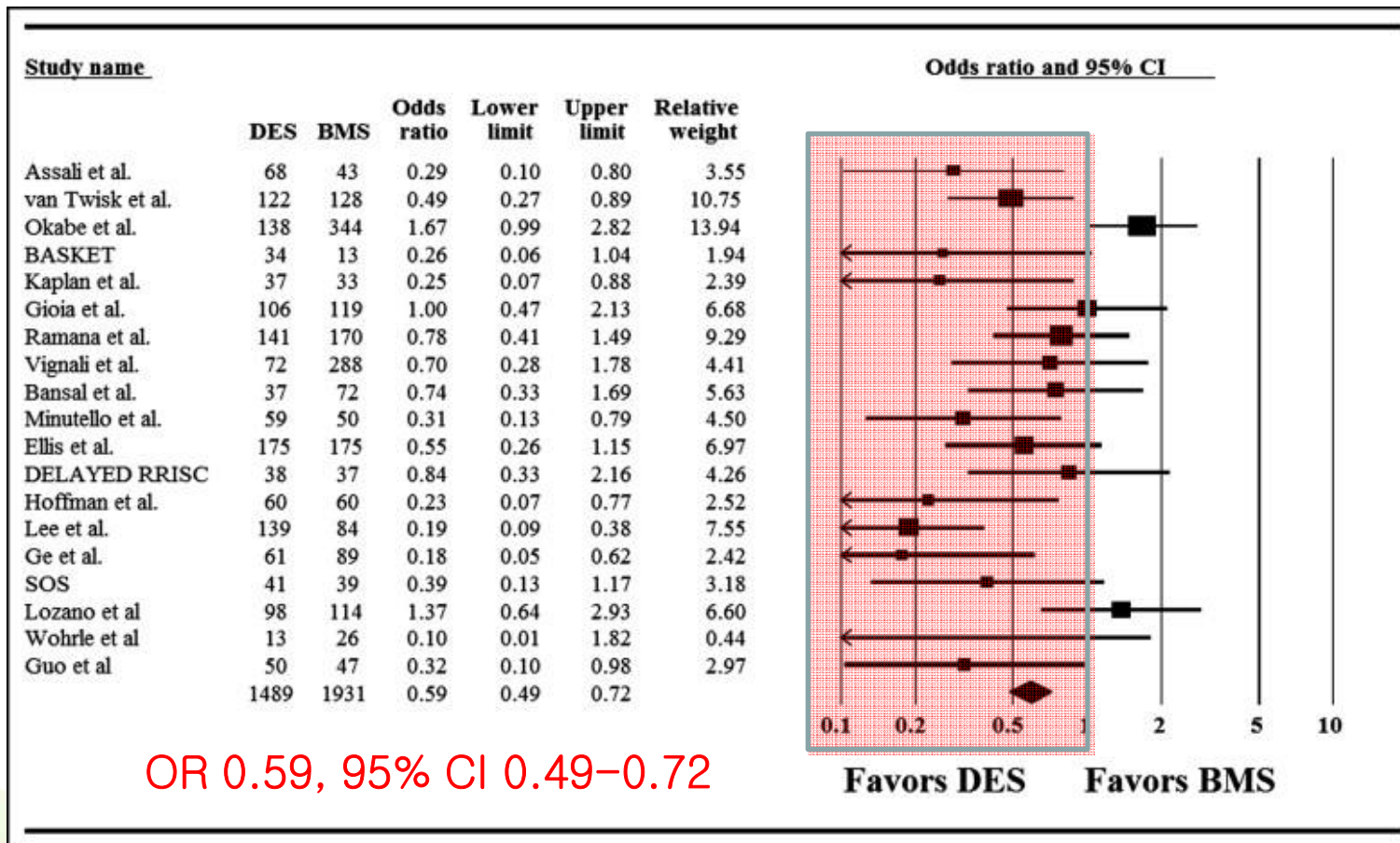
**Seoul St. Mary's Hospital**  
**Catholic University of Korea**  
**Hun-Jun Park, MD**



# Saphenous Vein Graft Disease

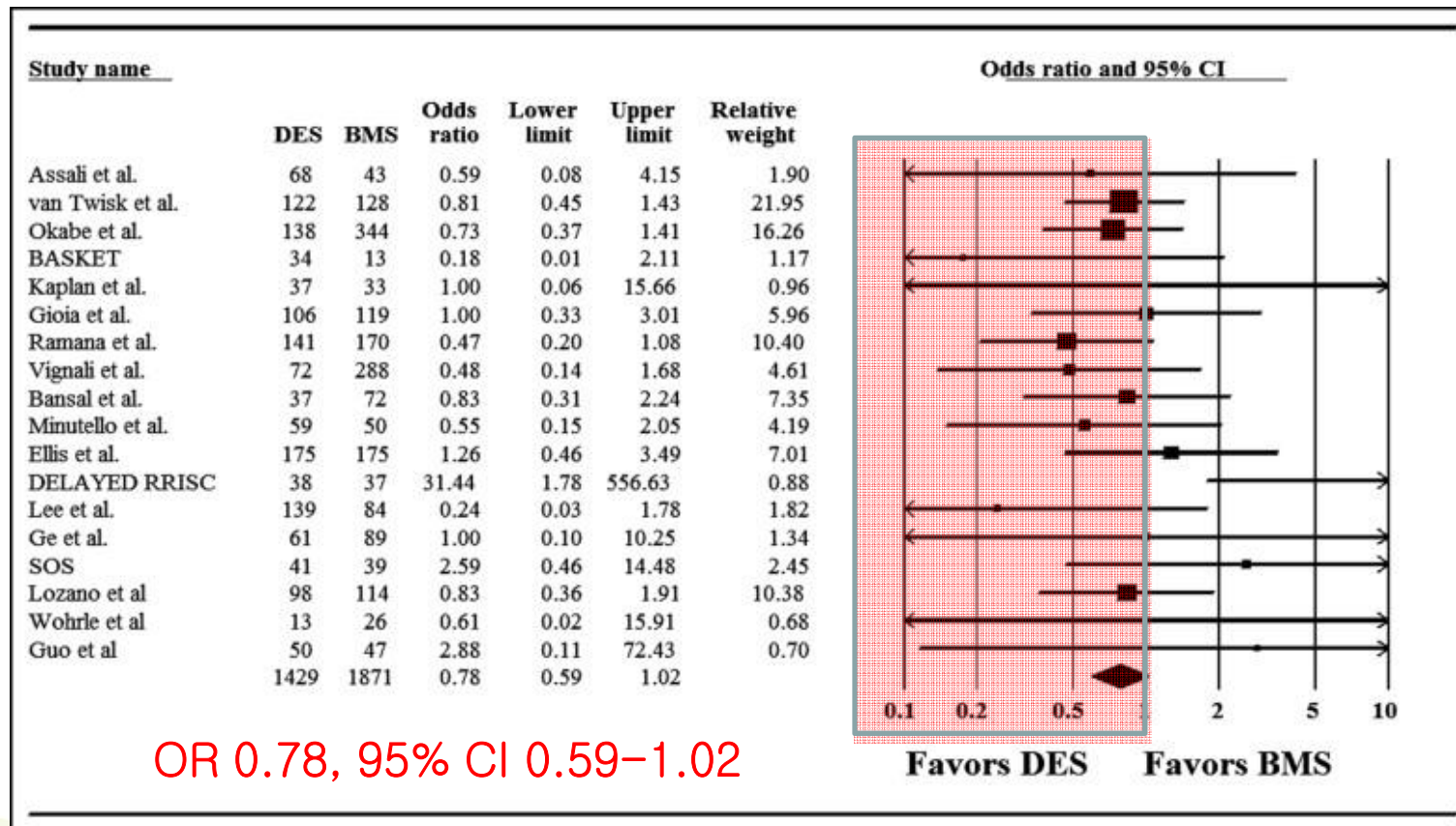
- **SVG have a progressive closure rate**
  - 12%-20% at 1<sup>st</sup> year &  $\approx$ 50% by 10 years
  - thin-walled venous structure is devascularized & exposed to the higher wall stress
- **SVG PCI is more attractive than reoperation**
  - have lower morbidity & mortality rate than reoperation
  - limited by no-reflow, distal embolization & periprocedural MI
  - use of embolic protection device improved the outcomes
- **SVG PCI with DES**
  - safe with improved mid-term outcomes compared to BMS
  - long term clinical benefit is not determined yet

# DES vs BMS in SVG PCI



**TVR associated with DES vs BMS**

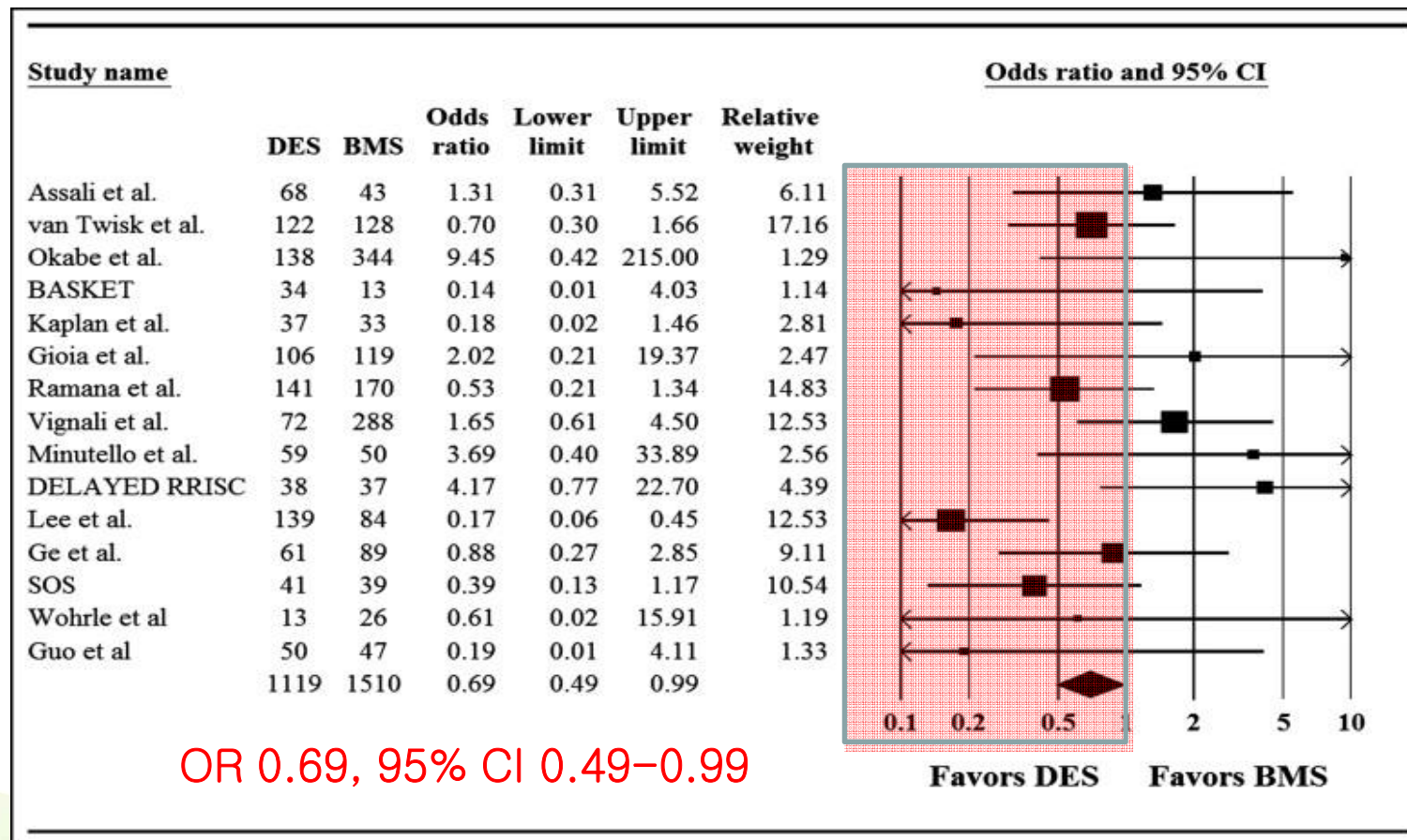
# DES vs BMS in SVG PCI



## Death associated with DES vs BMS

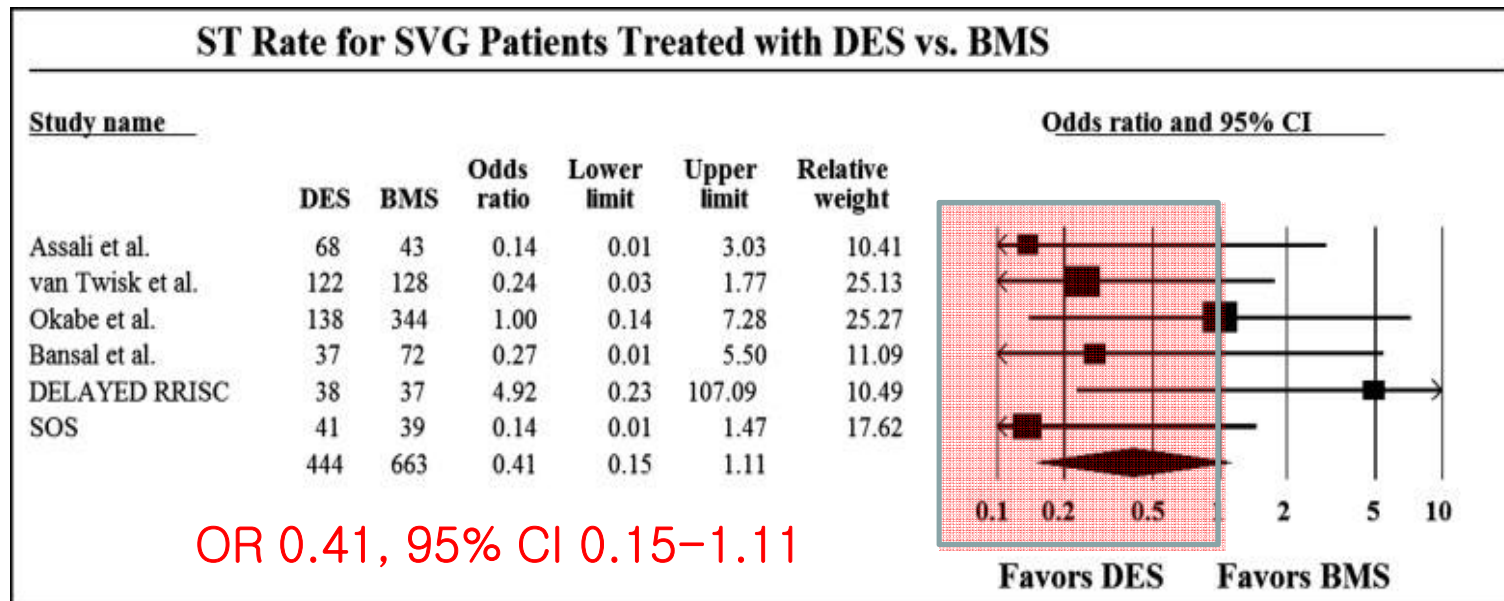
MS Lee, et al., *Am J Cardiol* 2010

# DES vs BMS in SVG PCI



MI associated with DES vs BMS

# DES vs BMS in SVG PCI



## Stent thrombosis associated with DES vs BMS

MS Lee, et al., *Am J Cardiol* 2010





**DES is better than BMS  
for SVG PCI  
However.....**



# Long term safety of DES in SVG PCI

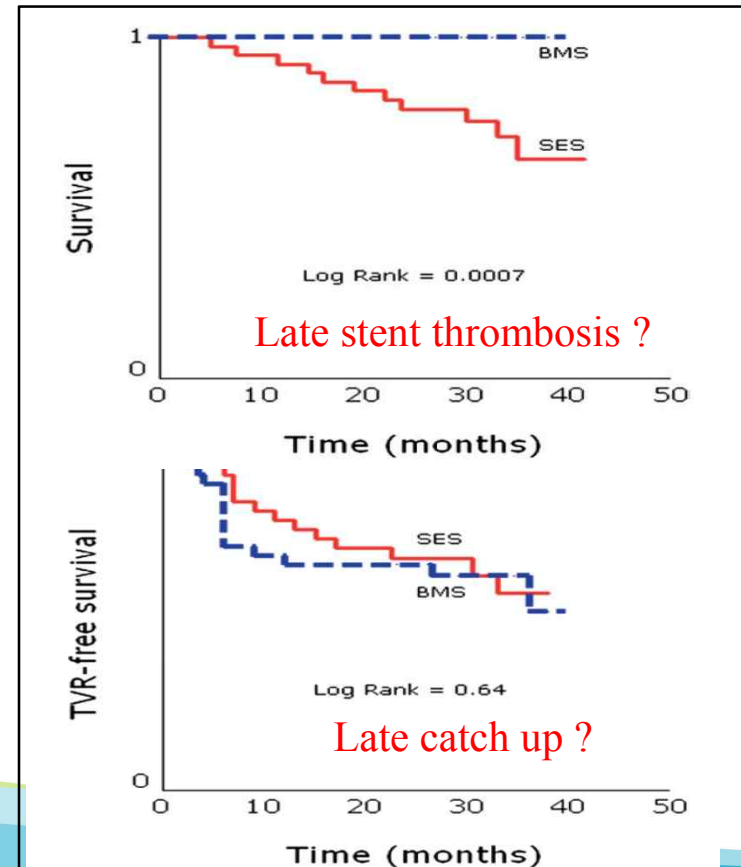
## RRISC Trial

- Randomized clinical trials in SVGD
- 38 pts. with 60 SES vs. 37 pts. with 54 BMS
- Primary end point : Late loss at 6 month

	BMS	SES	p Value
Late loss (mm)			
In-segment	0.70 ± 0.61	0.40 ± 0.51	0.015
Proximal edge	0.17 ± 0.55	0.17 ± 0.48	0.97
In-stent	0.79 ± 0.66	0.38 ± 0.51	0.001
Distal edge	0.24 ± 0.50	0.19 ± 0.51	0.61
Binary angiographic restenosis			
In-stent	15 (30.6%)	5 (11.3%)	0.024
In-segment	16 (32.6%)	6 (13.6%)	0.031
Intravascular ultrasound volumetric analysis			
Follow-up	(n = 39)	(n = 34)	
Stent length (mm)	21.2 [17.1–30.9]	23.4 [18.8–31.6]	0.14
Stent volume (mm <sup>3</sup> )	211 [143–282]	214 [174–325]	0.23
Lumen volume (mm <sup>3</sup> )	175 [125–243]	205 [174–310]	0.023
Neointimal volume (mm <sup>3</sup> )	24 [8–34]	1 [0–13]	<0.001
	<b>BMS (n = 37)</b>	<b>SES (n = 38)</b>	<b>p Value</b>
In-hospital			
Death	0	0	
Repeat revascularization	0	0	
Major periprocedural myocardial infarction	1 (2.7%)	2 (5.3%)	0.99*
Minor periprocedural myocardial damage	4 (10.8%)	9 (23.7%)	0.14
Median cardiac troponin I increase (ng/dl) [range]	4.71 [0.43–5.33]	2.18 [0.54–9.01]	0.82
From discharge to 30 days			
Death	0	0	
Repeat revascularization	0	0	
Myocardial infarction	0	0	
Between 1 and 6 months			
Death	0	1 (2.6%)	0.99*
Myocardial infarction	0	1 (2.6%)	0.99*
TLR (per patient)	8 (21.6%)	2 (5.3%)	0.047*
TVR (per patient)	10 (27%)	2 (5.3%)	0.012*
Cumulative 6-month MACE	11 (29.7%)	6 (15.8%)	0.15
TVF (per patient)	11 (29.7%)	5 (13.2%)	0.08
TLR (per lesion)	10/49 (20.4%)	2/47 (4.3%)	0.017
TVR (per lesion)	12/49 (24.5%)	2/47 (4.3%)	0.005
TVF (per lesion)	13/49 (26.5%)	5/47 (10.6%)	0.046

## DELAYED RRISC Trial

- Median FU : 32 month (26.5-36 month)
- Secondary post-hoc analysis of all-cause mortality, MI & TLR





# Long term safety of DES in SVG PCI

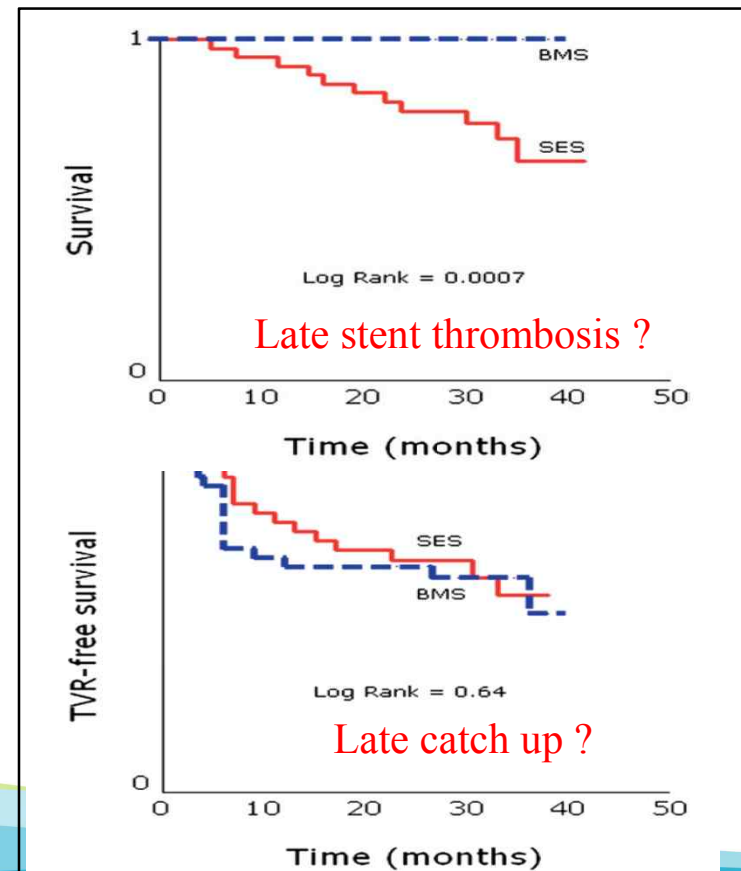
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# Long term safety of DES in SVG PCI

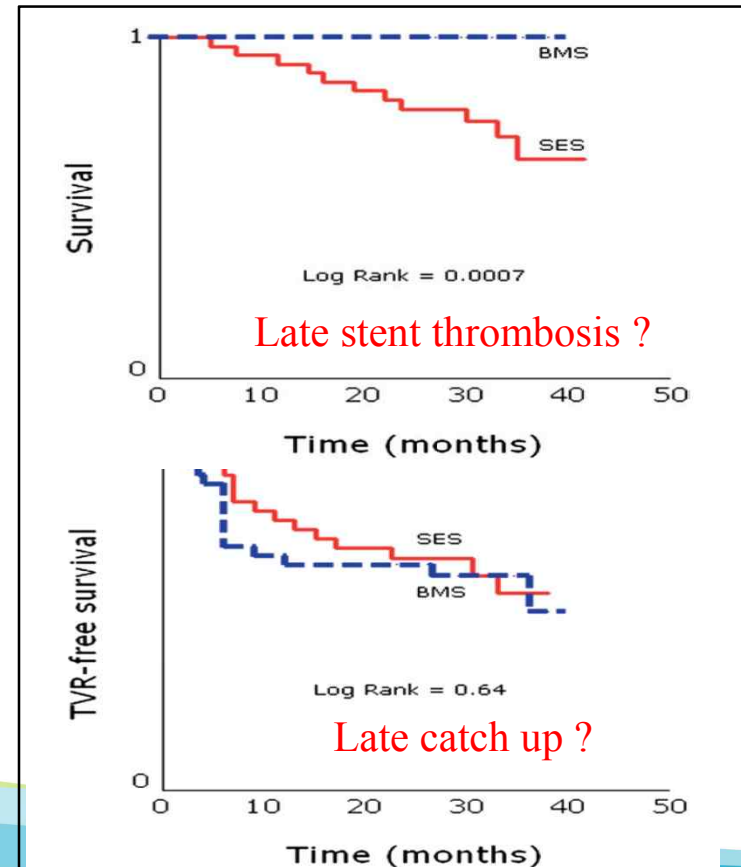
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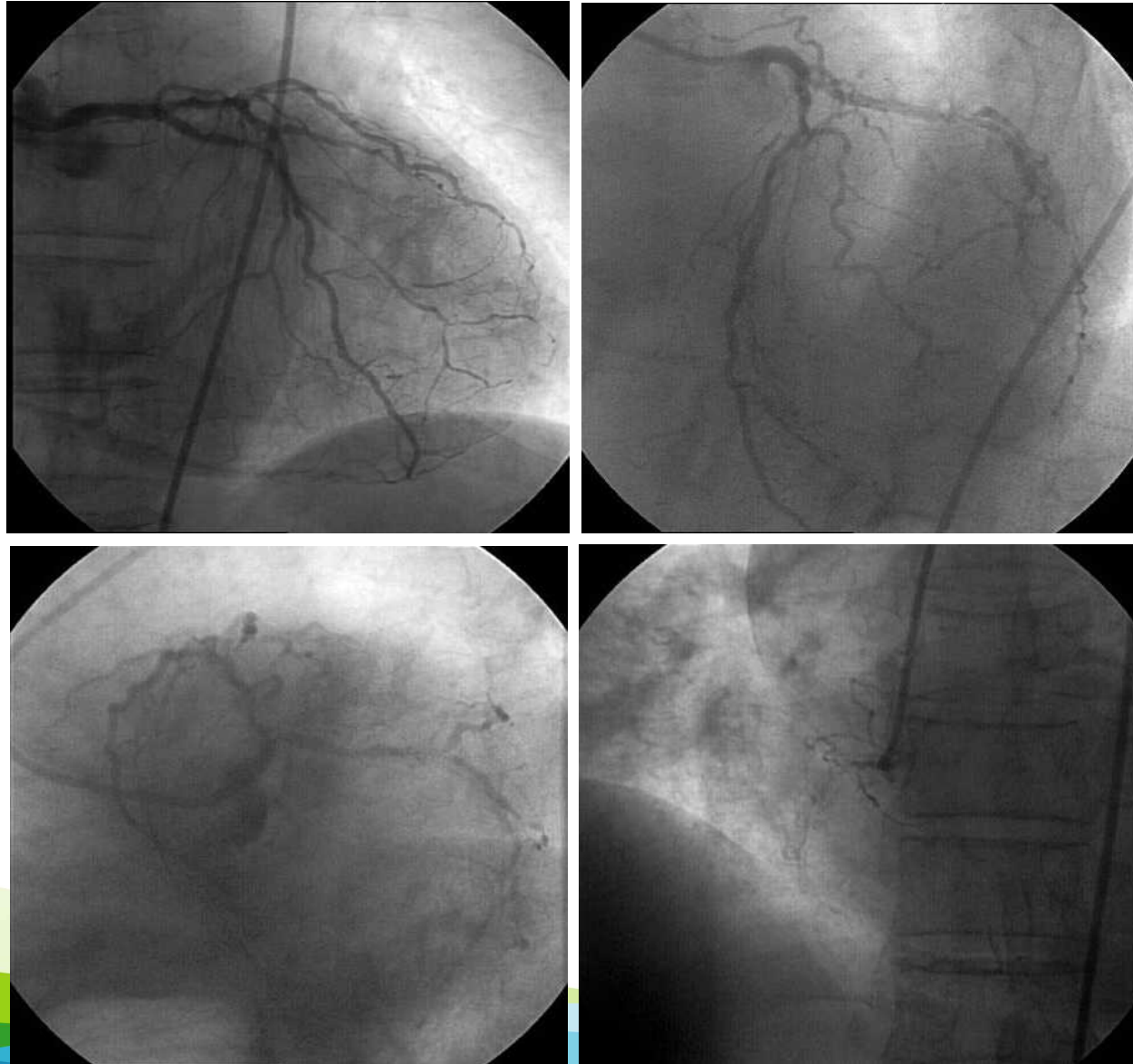


# CASE

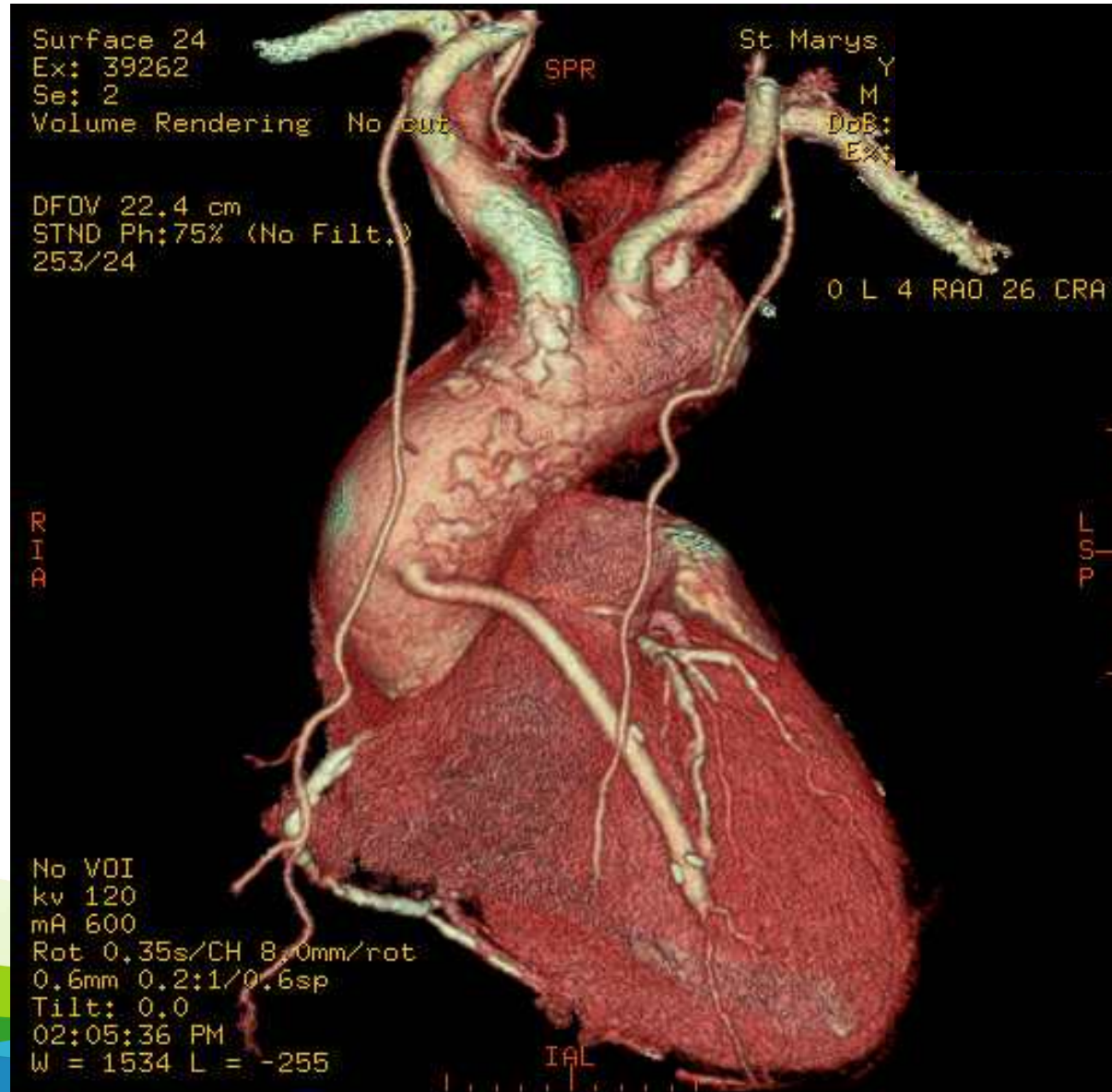
- **77-year-old male patient**
- **Five years ago, CABG (SVG to LAD) was performed in Yeouido St. Mary's Hospital due to 3-vessel disease**
- **Six months ago, PTCA in SVG to LAD anastomosis site**
- **He had recurrent exertional chest pain for 1 month.**
- **Risk factors : Hypertension**
- **Echocardiogram: EF = 54%, Akinesia of inferior wall**



# CAG, 5 Years Ago

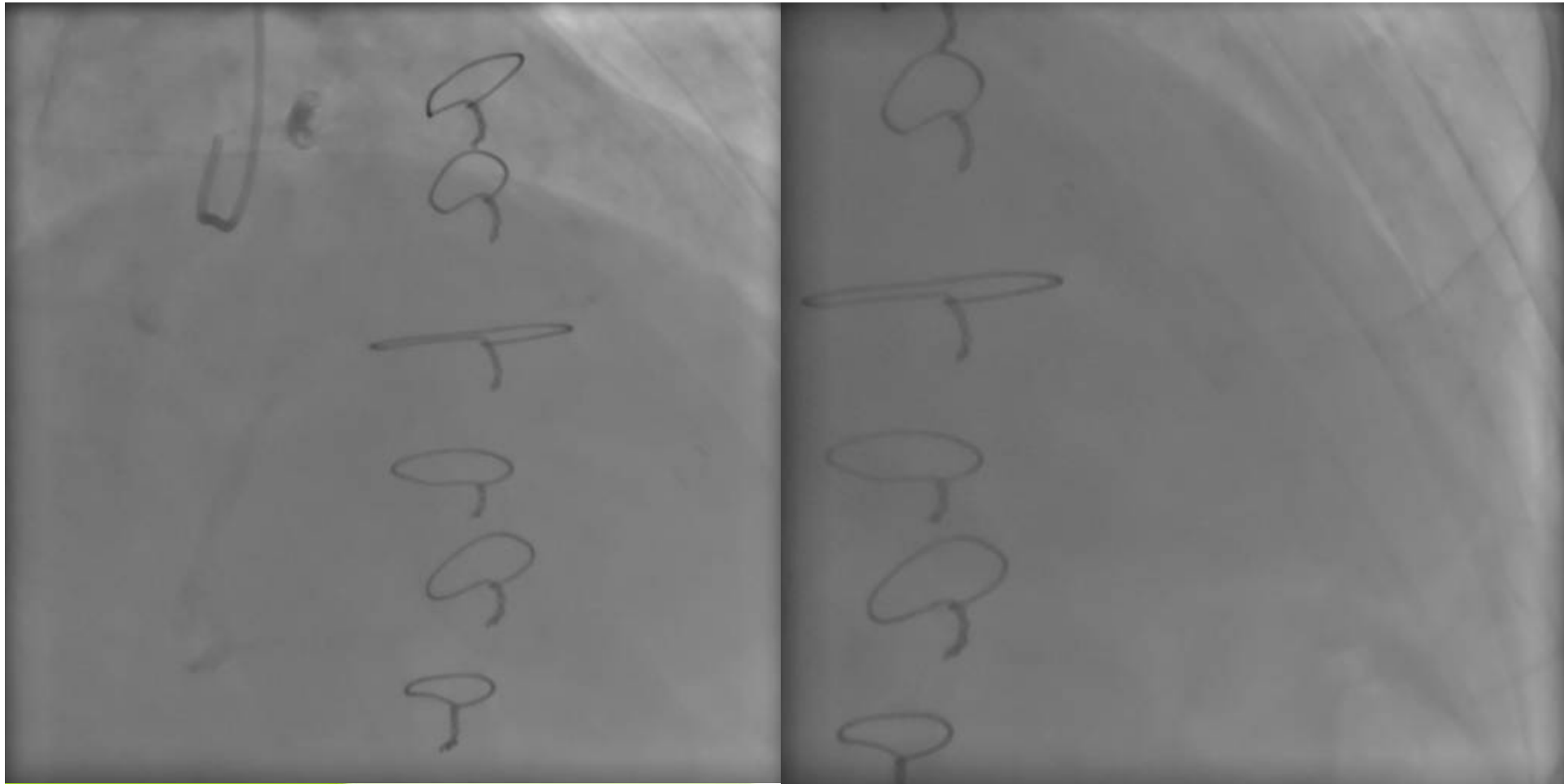


# CABG (SVG to LAD)



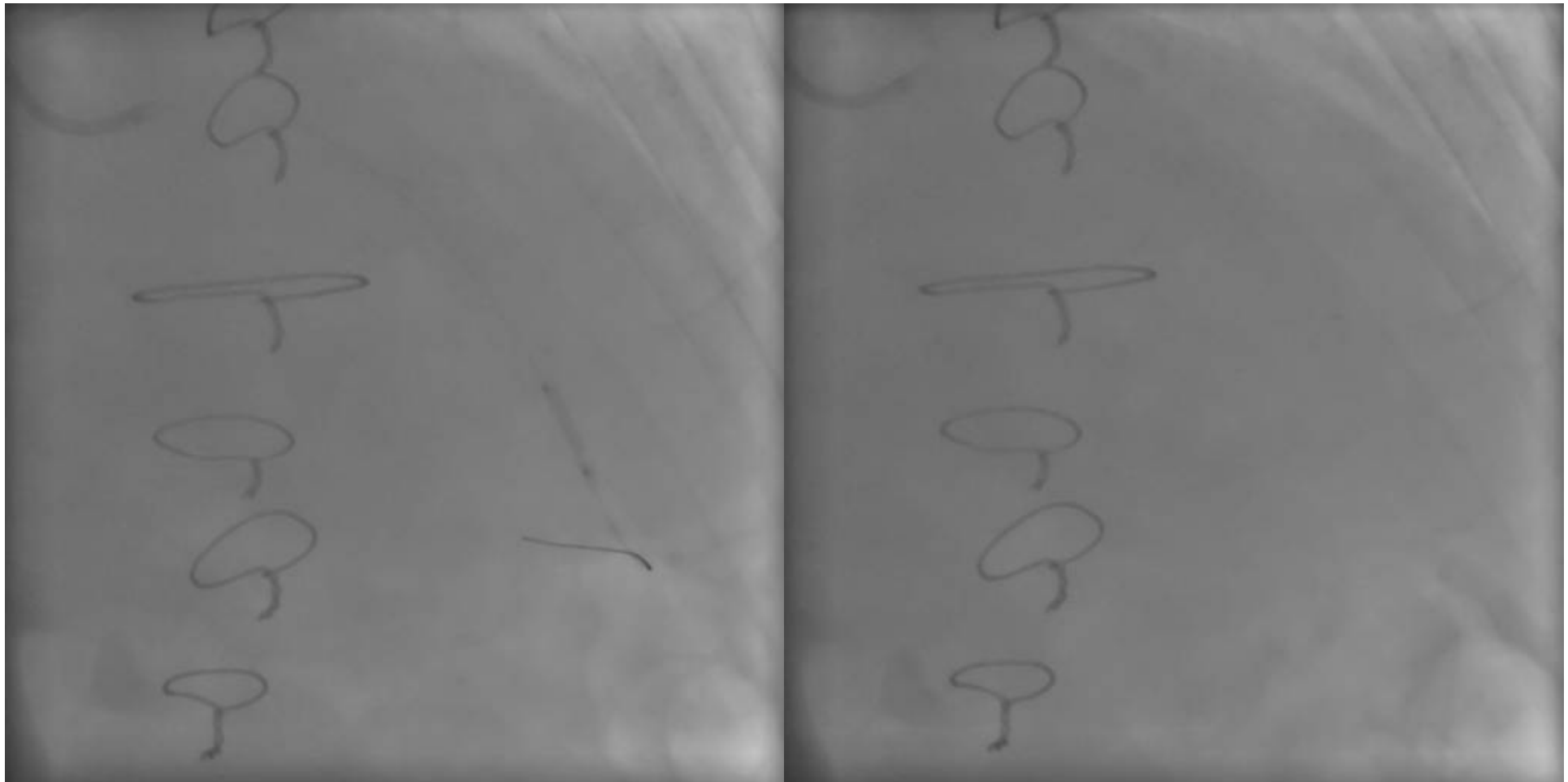


# CAG, 6 Months Ago





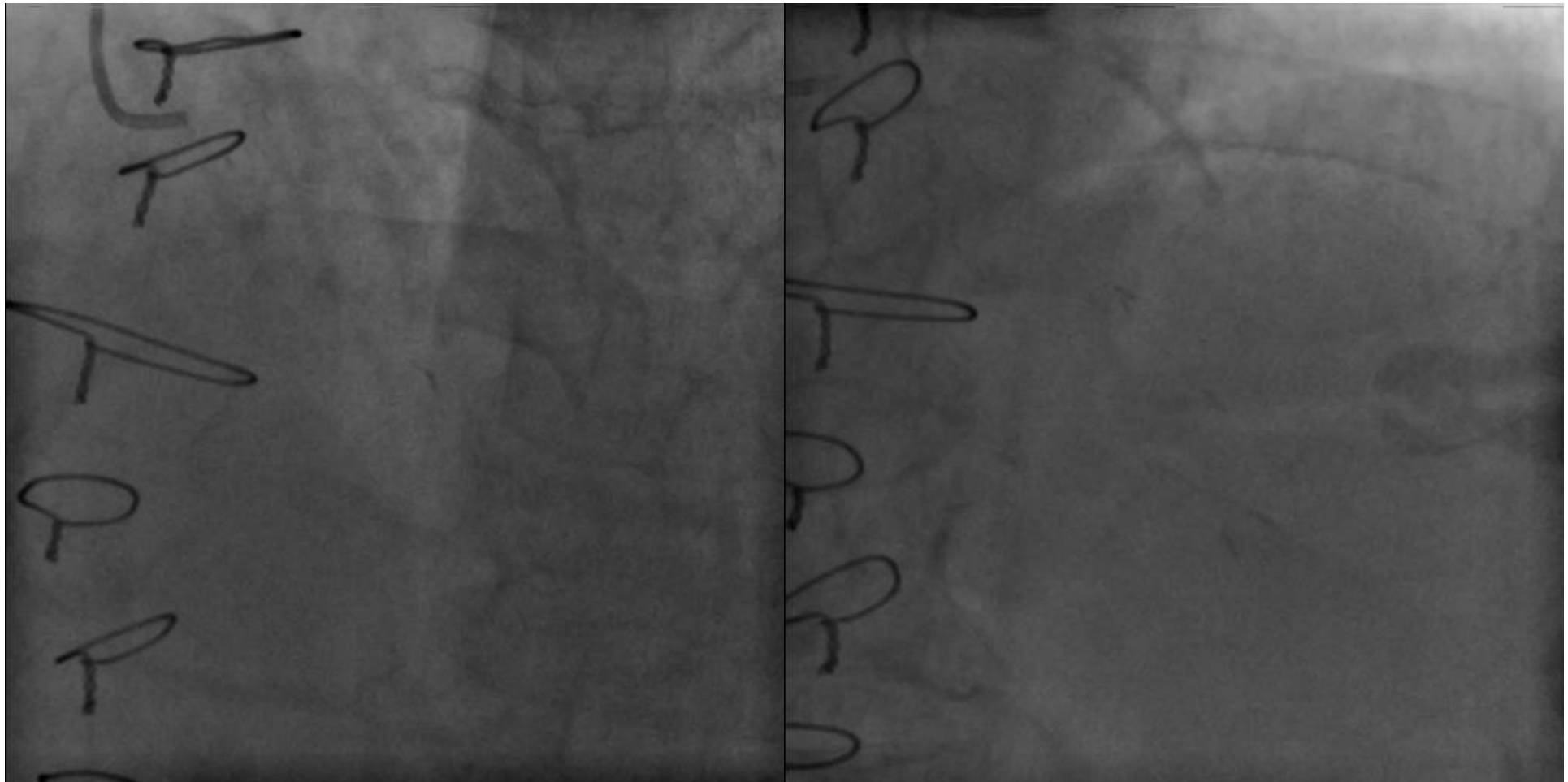
# PTCA, 6 Months Ago



**Ryujin 2.0 / 15 mm up to 9 atm**



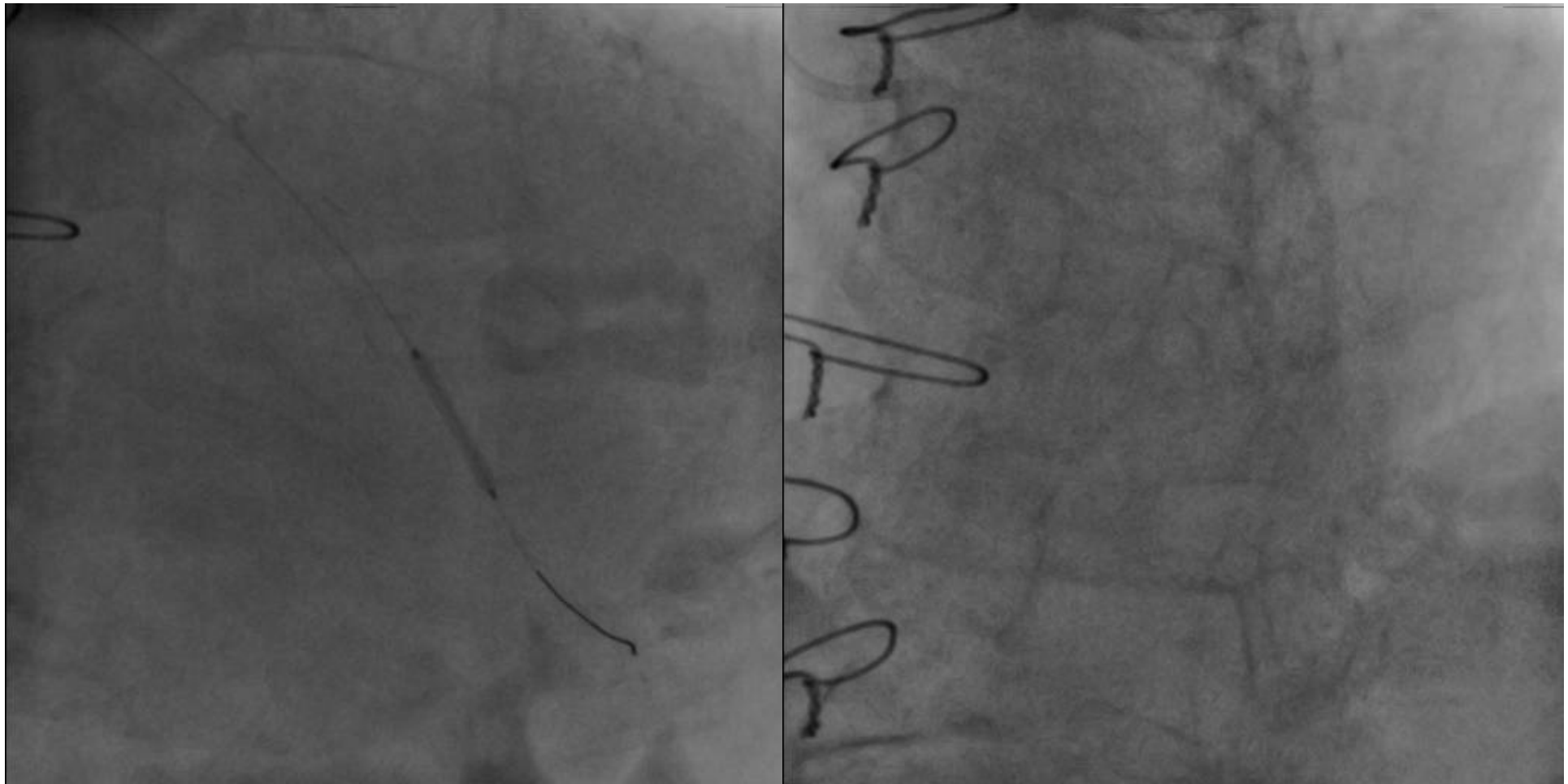
# CAG







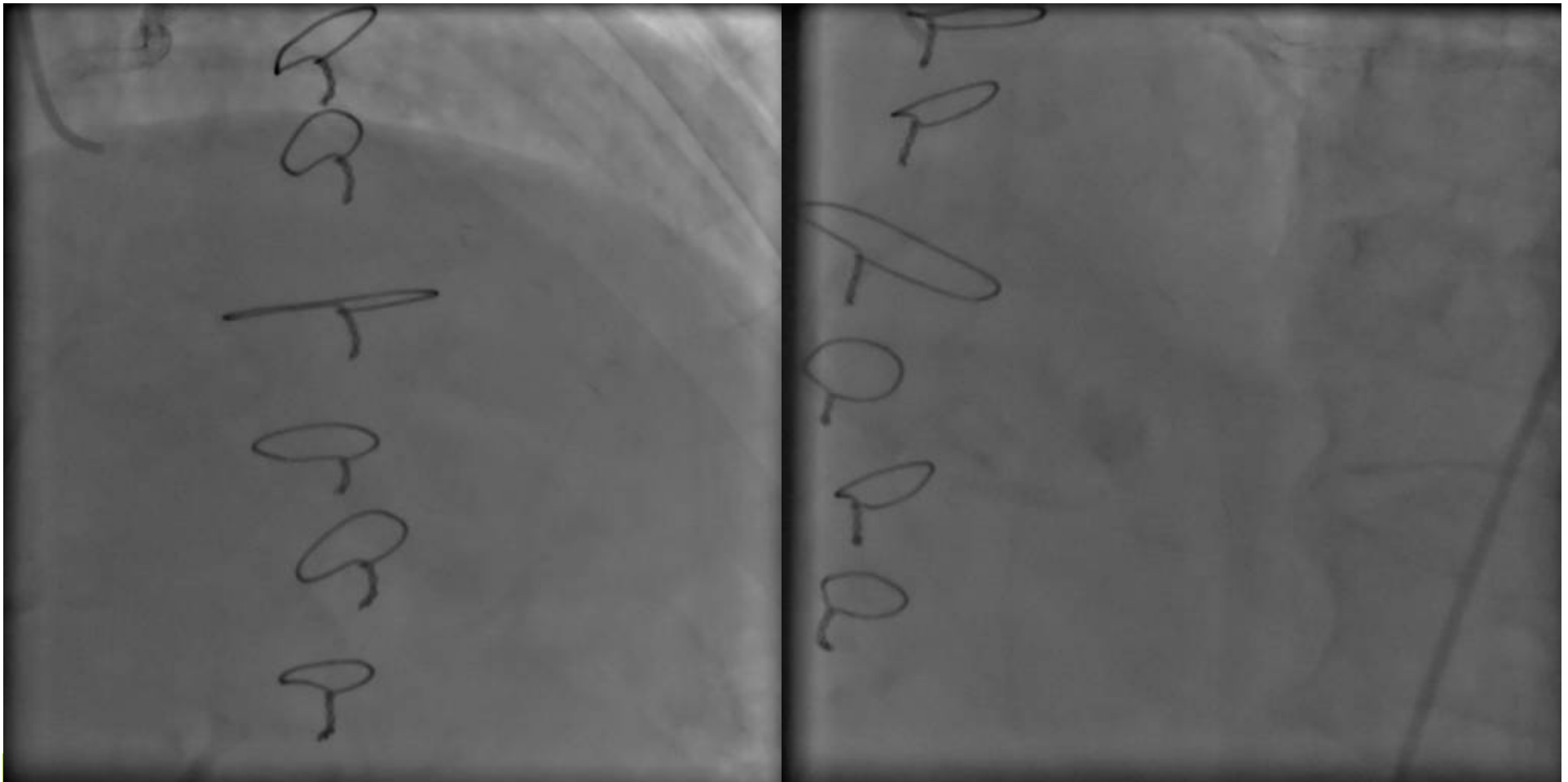
# PCI with DEB



**Ryujin 2.0 / 15 mm up to 8 atm**  
**Sequent Please 2.75 / 15 mm up to 14 atm**



# F/U CAG, 3 Months Later



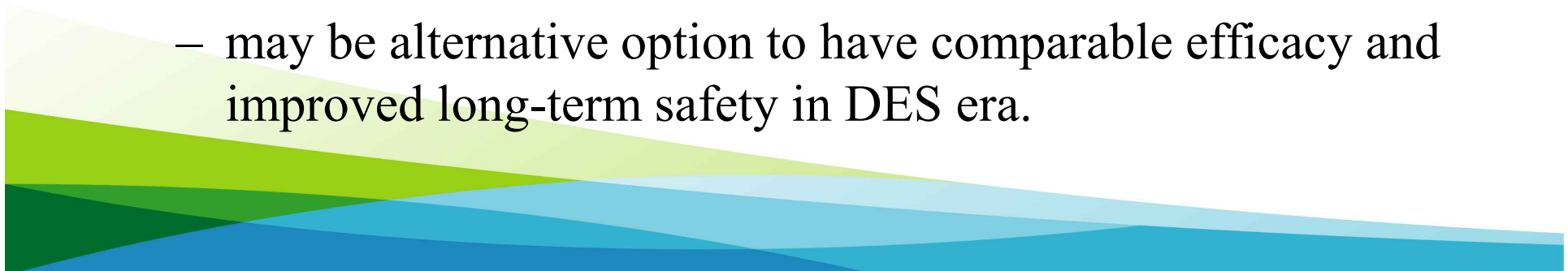
# Conclusions

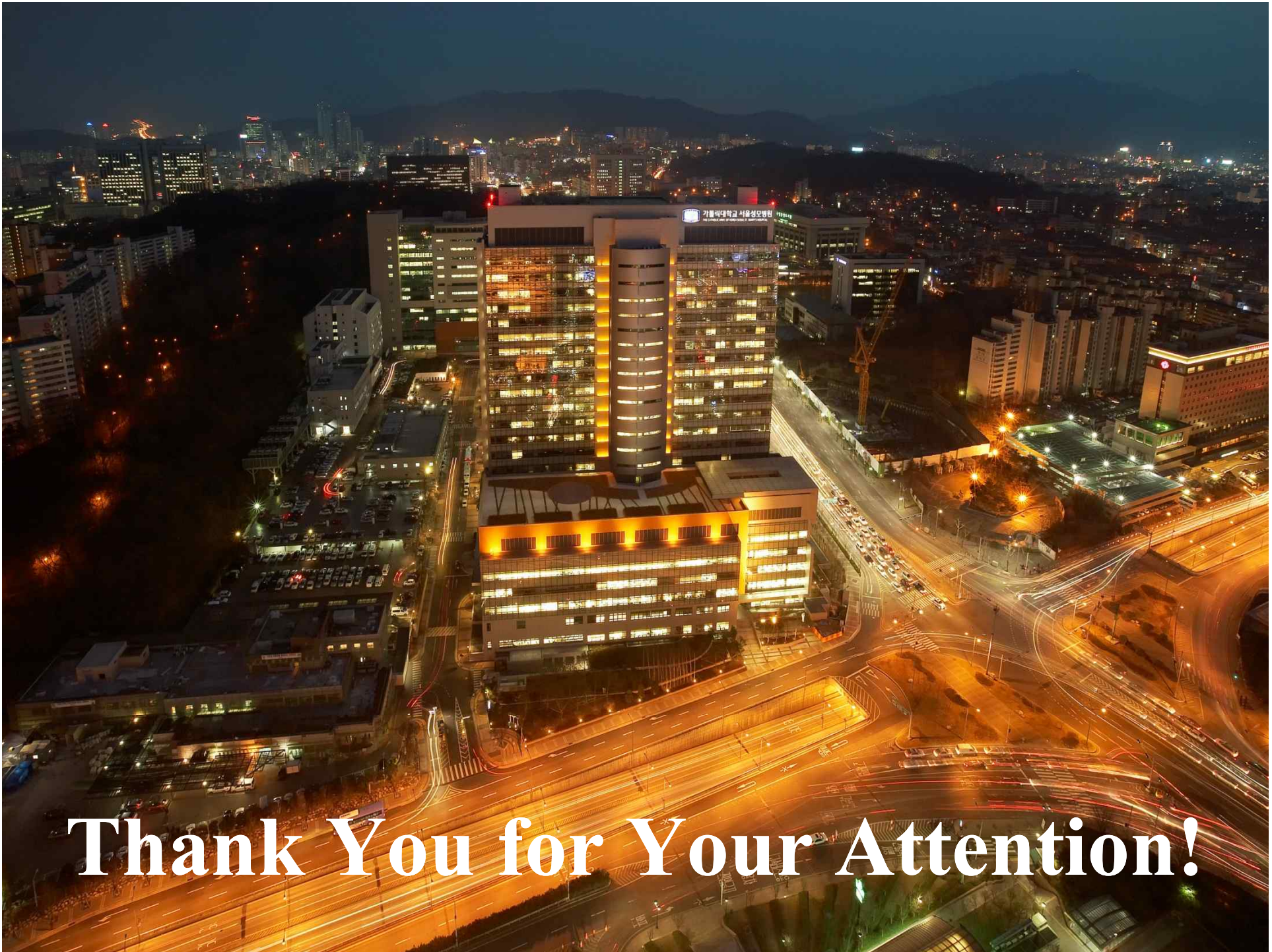
- **SVG lesions**

- more lipid-rich, softer and more prone to rupture than plaques in native coronary arteries.
- may lead to an enhanced inflammatory & thrombotic reaction after deployment of stents
- This can potentially be more pronounced with devices coated with drugs and polymers

- **DEB in SVGD**

- may be alternative option to have comparable efficacy and improved long-term safety in DES era.





**Thank You for Your Attention!**