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# *Complex PCI with BioResorbable Scaffolds*

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- *Hospital São Camilo*

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# Case

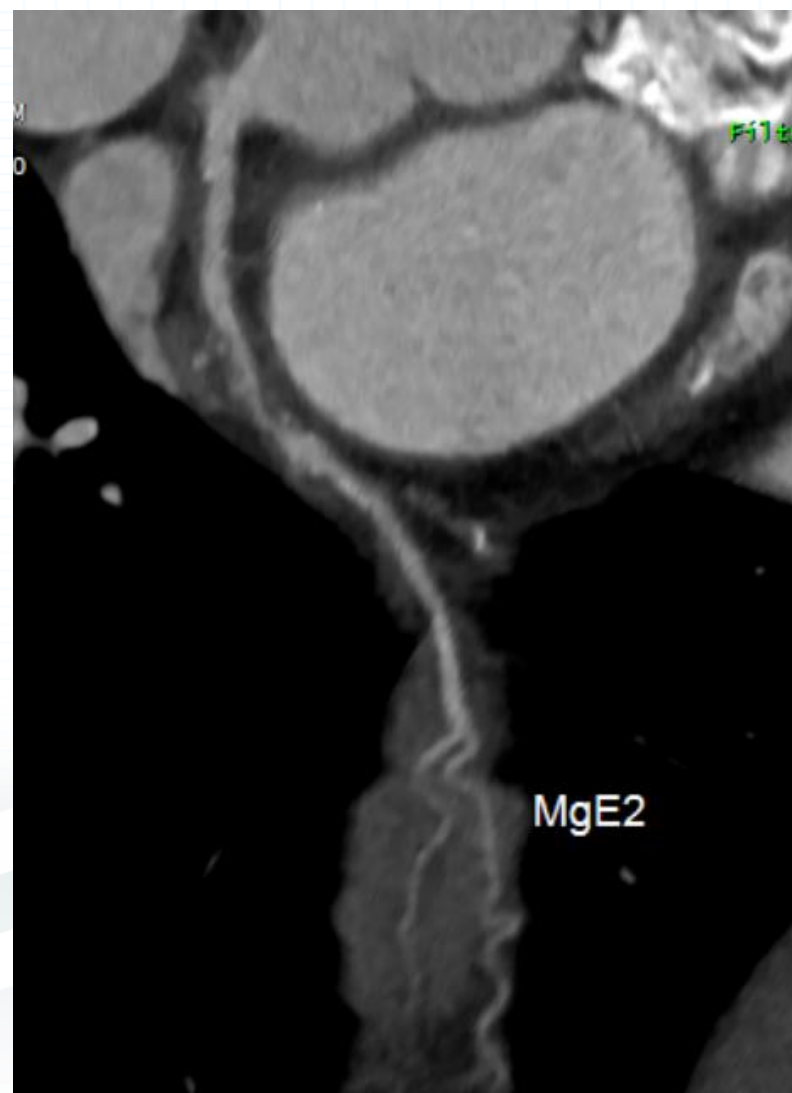
- Male, 49 y/o
- Coronary risk factors: Diabetes, hyperlipidemia, smoker
- Mild Symptoms: Atypical chest pain, lipothymia.
- Non-invasive evaluation
  - CCTA: LAD and LCX disease.



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# CCTA

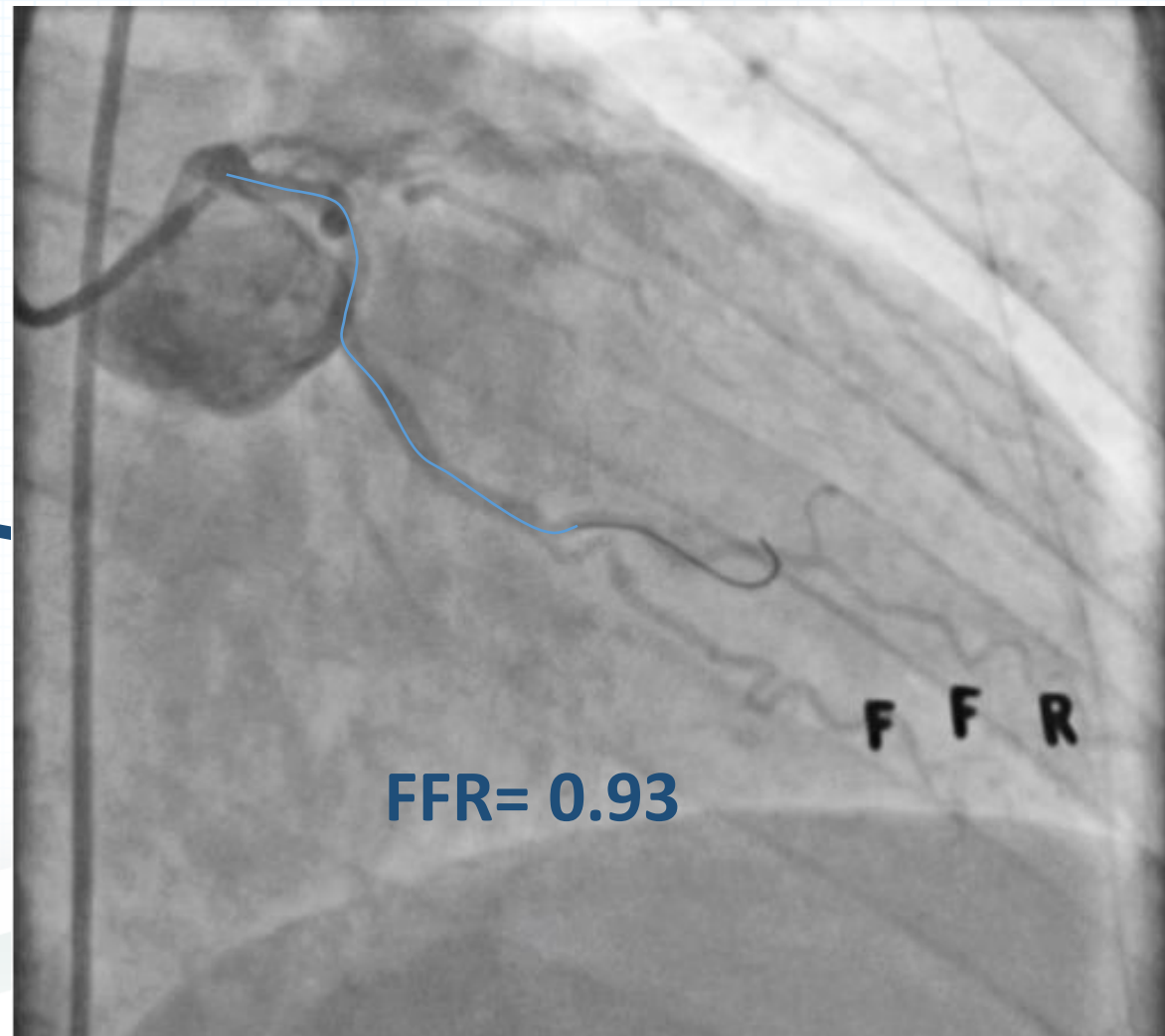
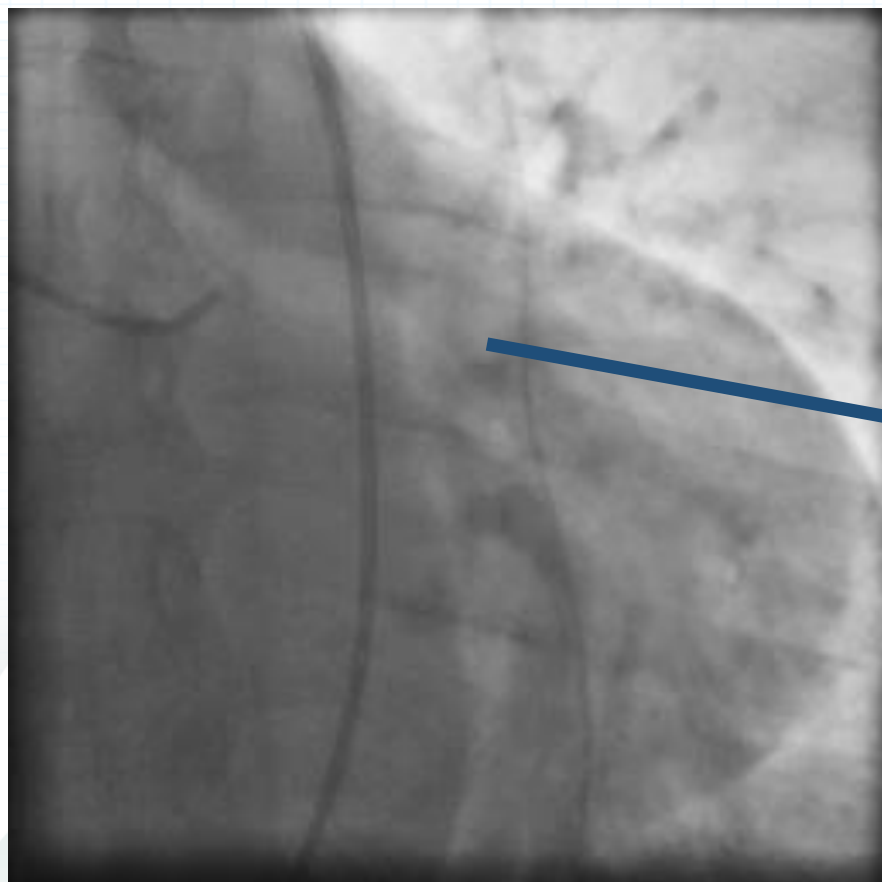




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# LCX – Multimodal evaluation



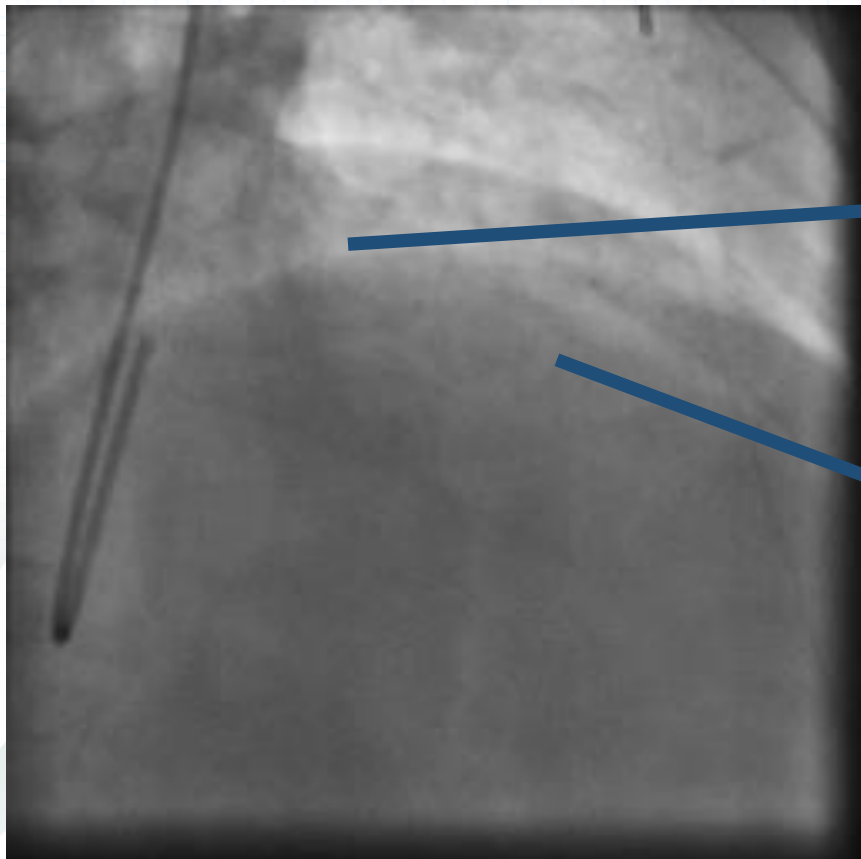
**MLA: 3,4mm<sup>2</sup> PB: 65%**



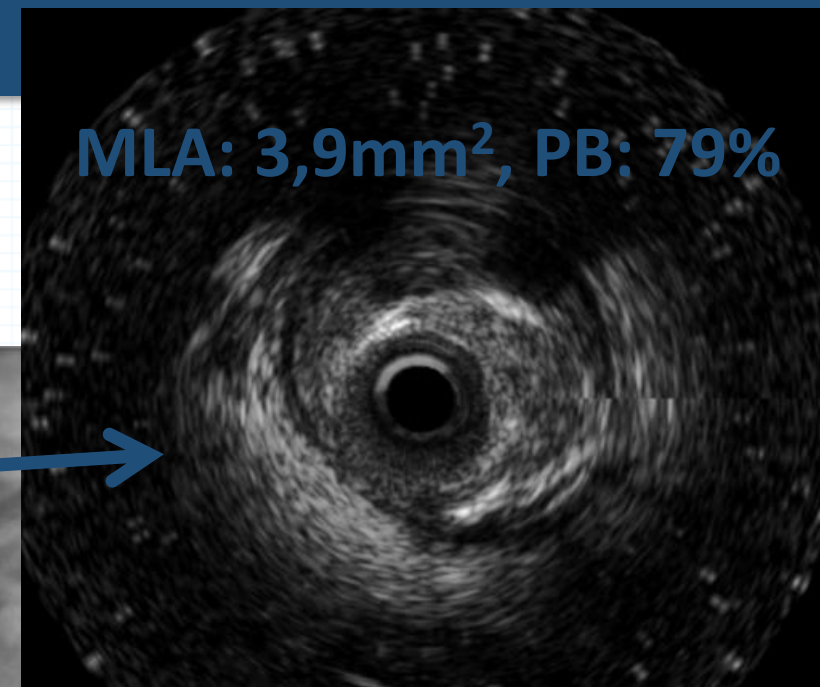
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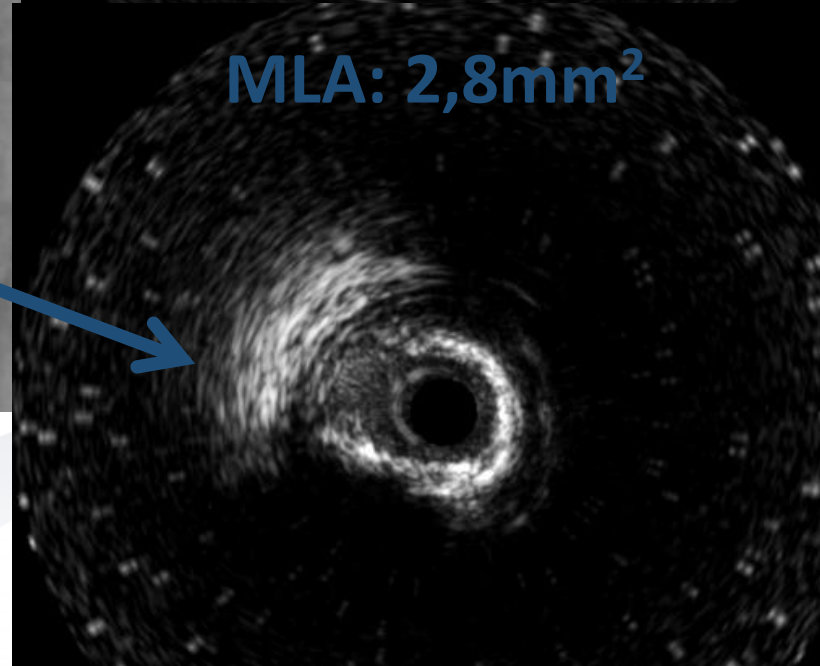
# LAD



MLA: 3,9mm<sup>2</sup>, PB: 79%



MLA: 2,8mm<sup>2</sup>







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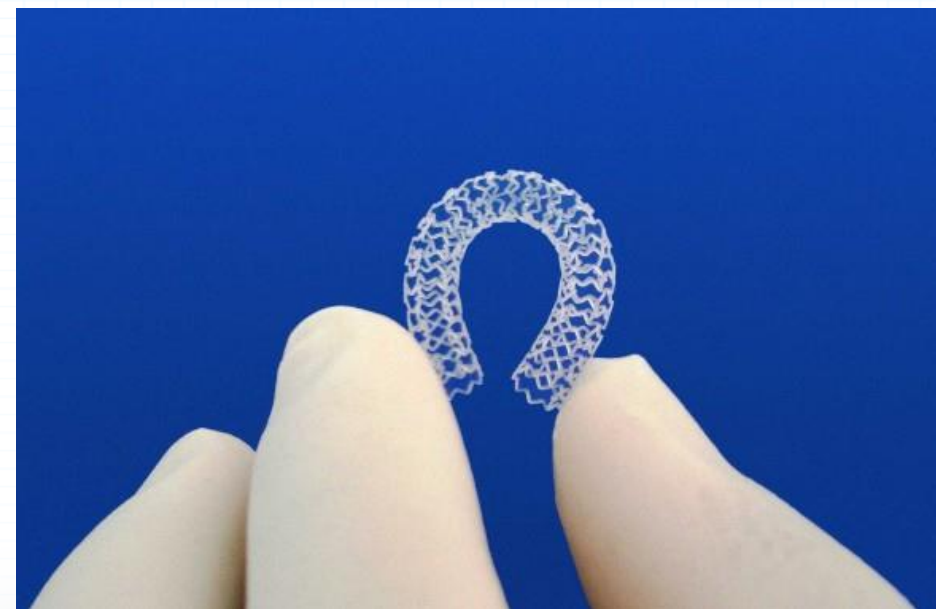
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## Why BRS?

- Long calcified LAD lesion in young patient with aggressive coronary artery disease (CAD).
- 2 BRS – overlapping
  - Future CAD progression → Future CABG?
  - Long lesion
  - Possible future DAPT discontinuation



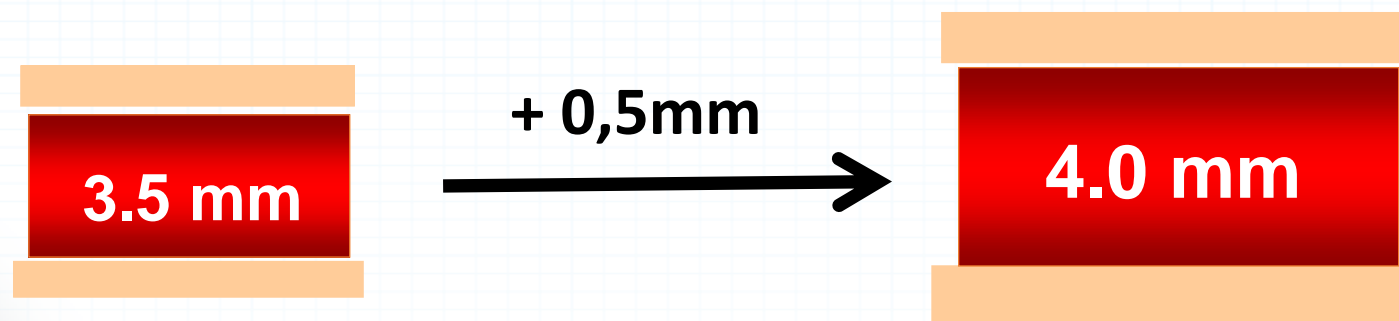
Variable	ABSORB (N=1,322)
Age, years	63.5±10.6
Diabetes mellitus	31.5%
Stable angina	57.3%
Unstable angina	26.9%
Silent ischemia	10.0%
ACC/AHA class B2 or C	68.7%
RVD, mm	2.67±0.45
RVD <2.25 mm	18%
Lesion length, mm	12.6±5.4



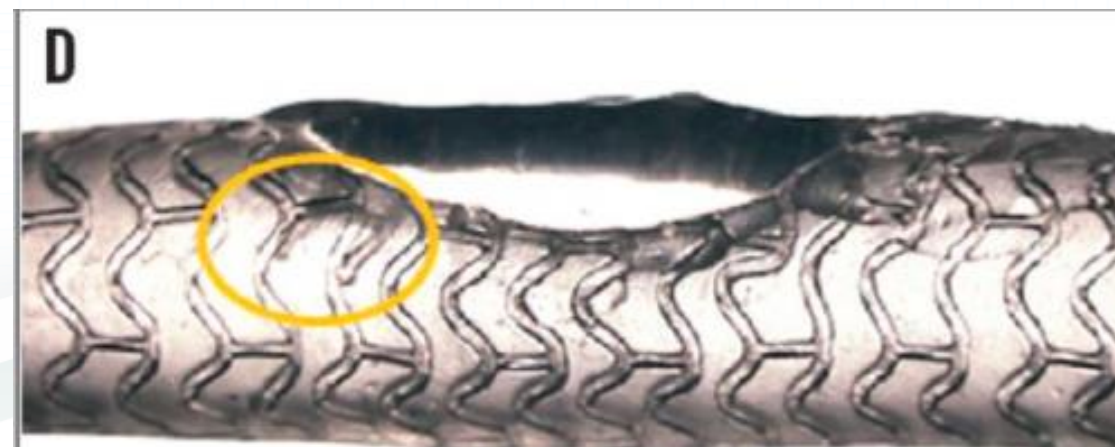
## • Exclusion criteria

- Calcification
- Bifurcation
- ....

# Accurate vessel sizing is important!!!



Expansion in silicone lesion model (3.5 BVS)	No. of fractures observed
3.5 mm (7 atm)	0
4.0 mm NC (14 atm, $\varnothing=4.09$ )	0
4.5 mm NC (14 atm, $\varnothing=4.53$ )	11.0





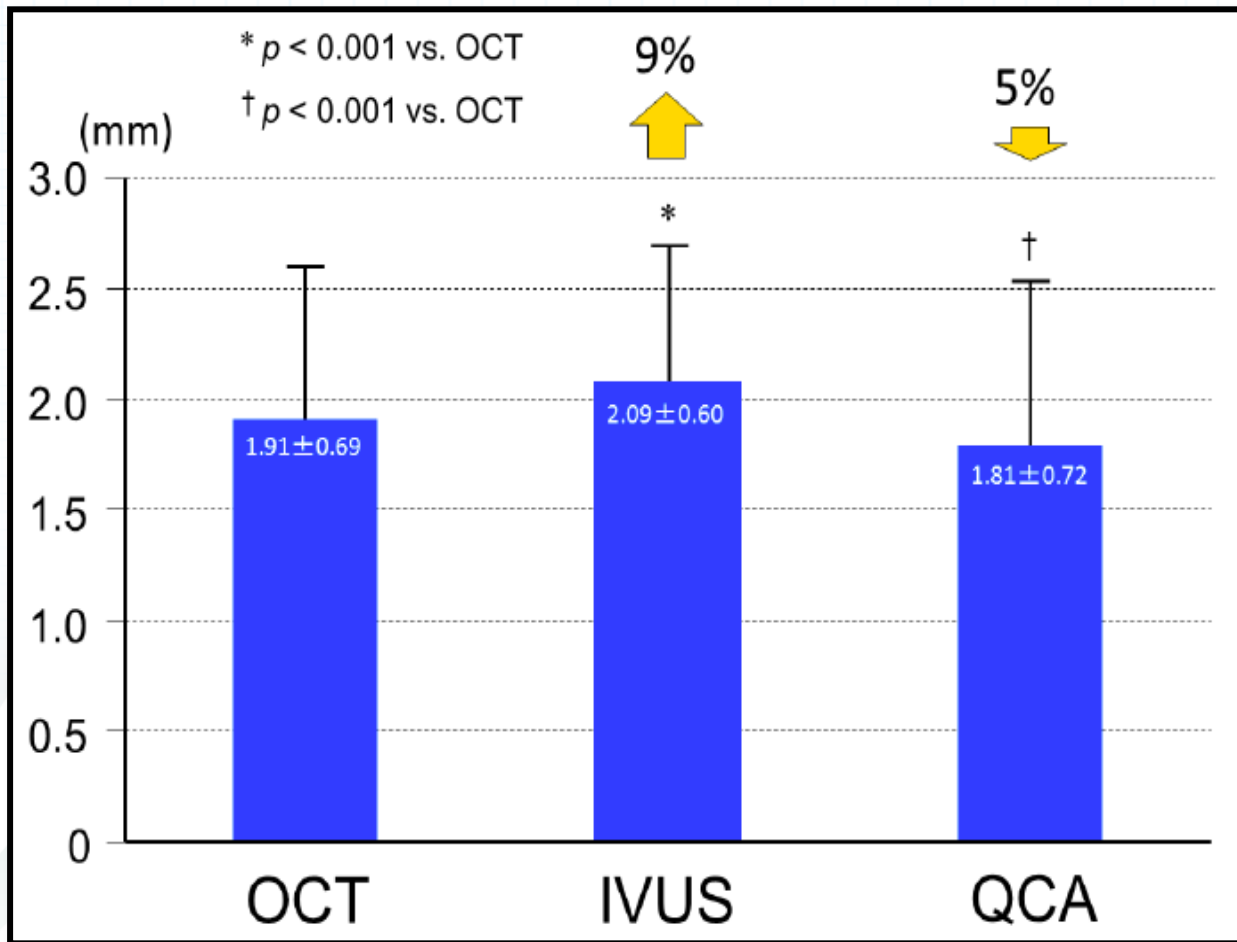


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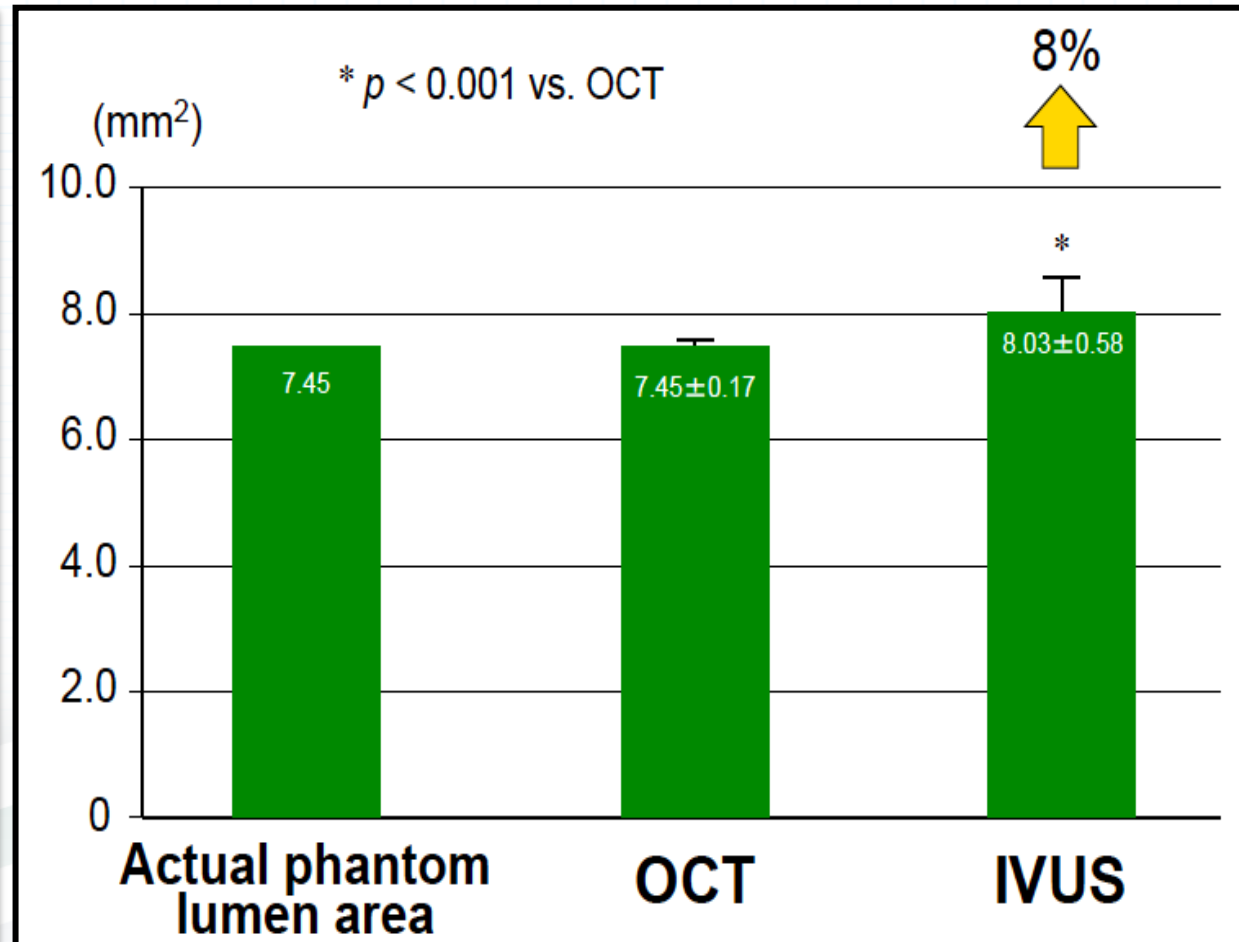
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# Accuracy in Measuring Lumen Dimensions – OPUS-CLASS Study –

### Differences in MLD among Angio, IVUS and FD-OCT



### Differences in Lumen Area between IVUS and FD-OCT



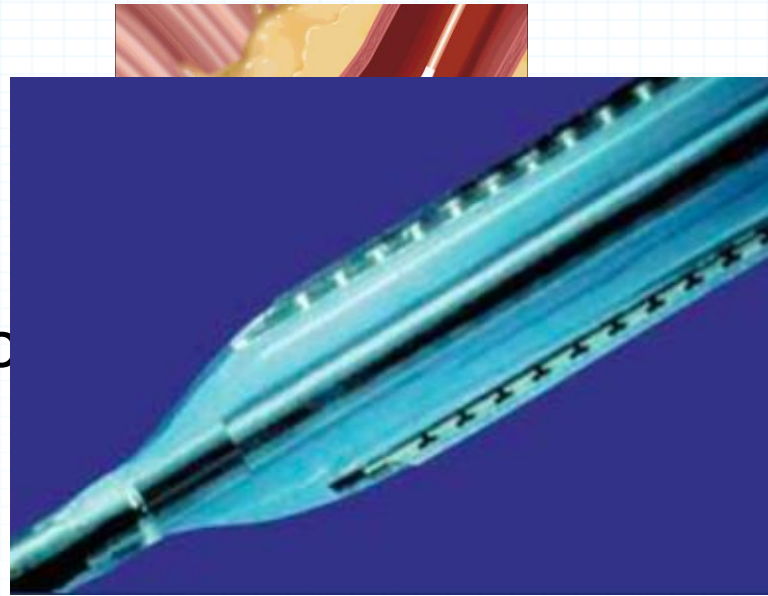


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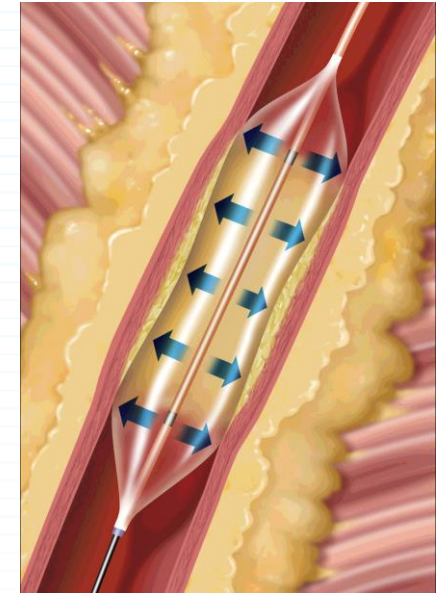
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## • Lesion preparation

- NC balloon
- Cutting balloon or AngioSculpt balloon
- Rotational Atherectomy



Semi-compliant



Non-compliant

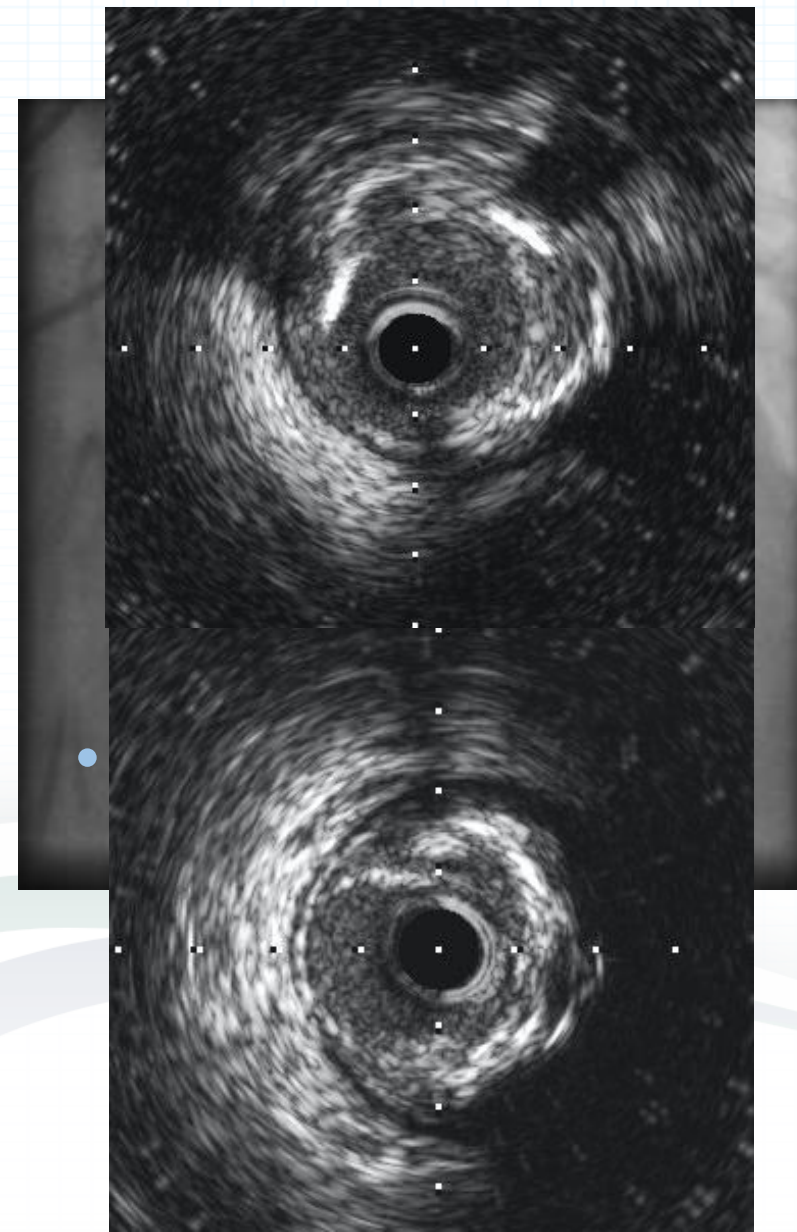
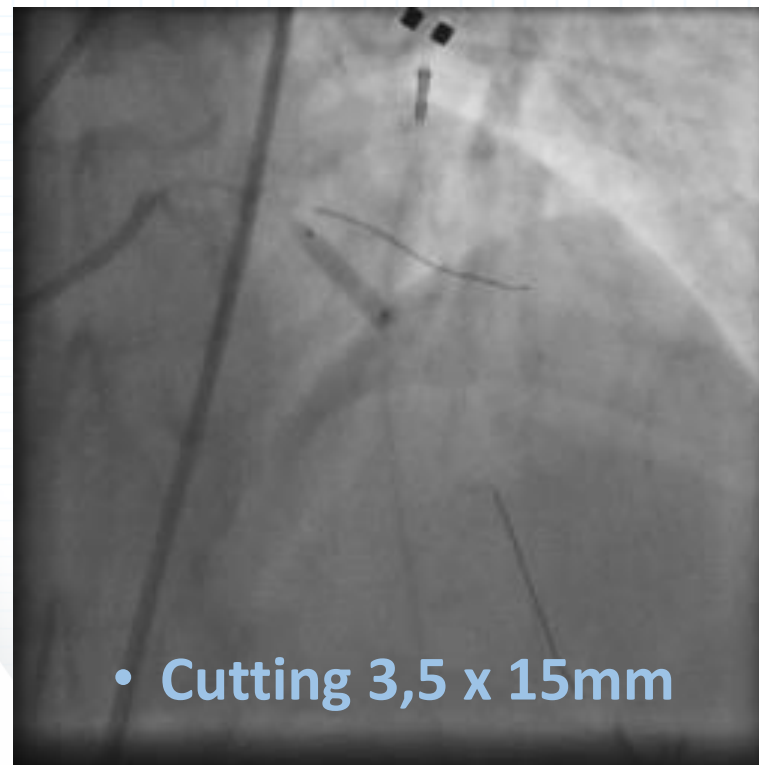
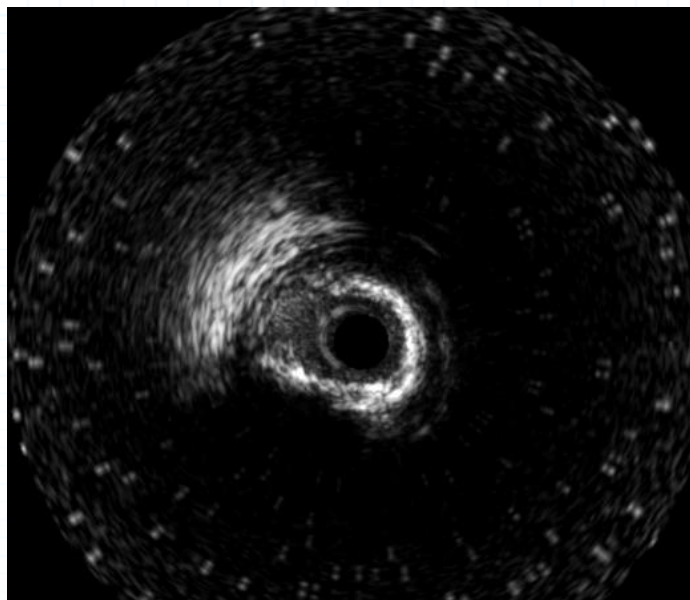




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# Calcium management





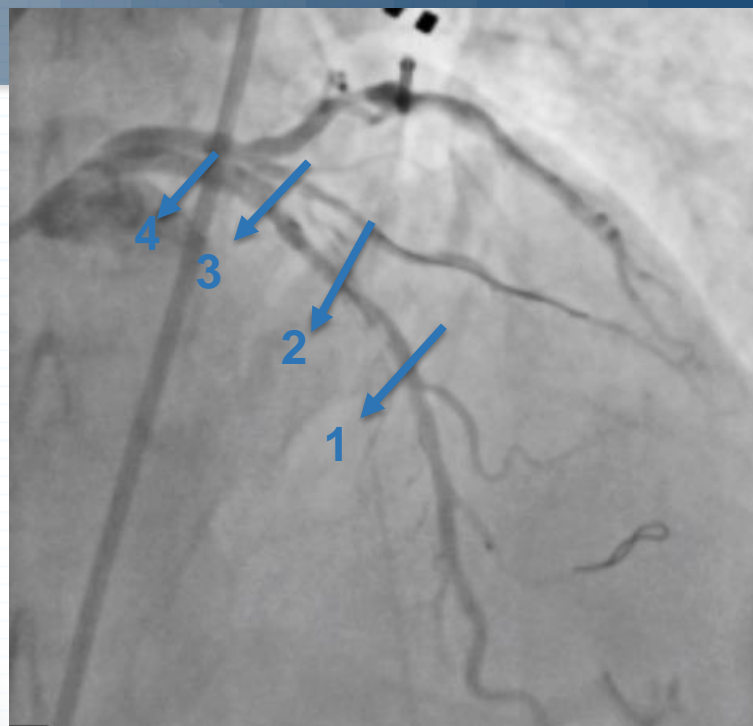


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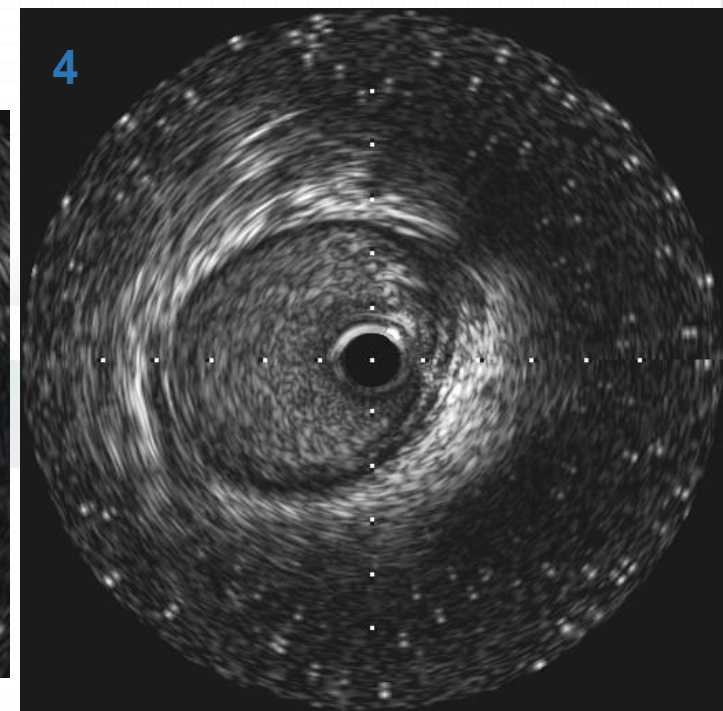
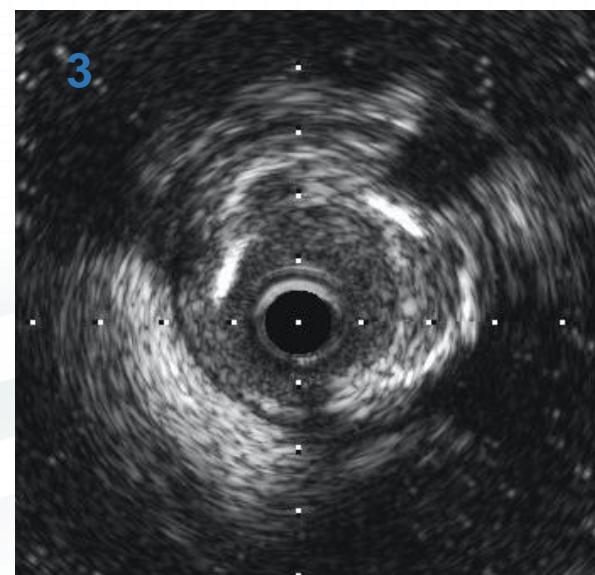
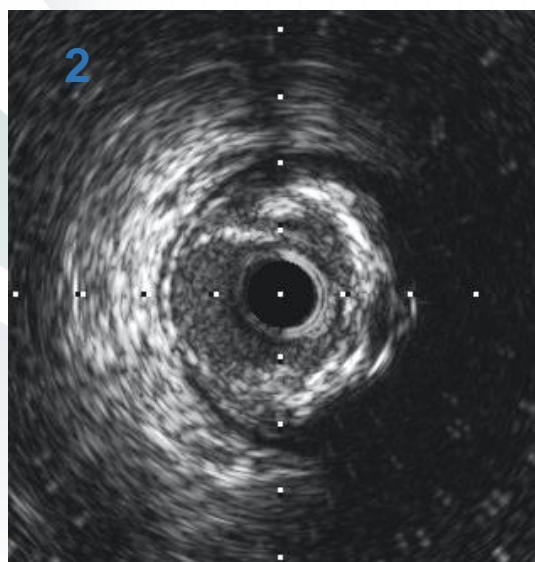
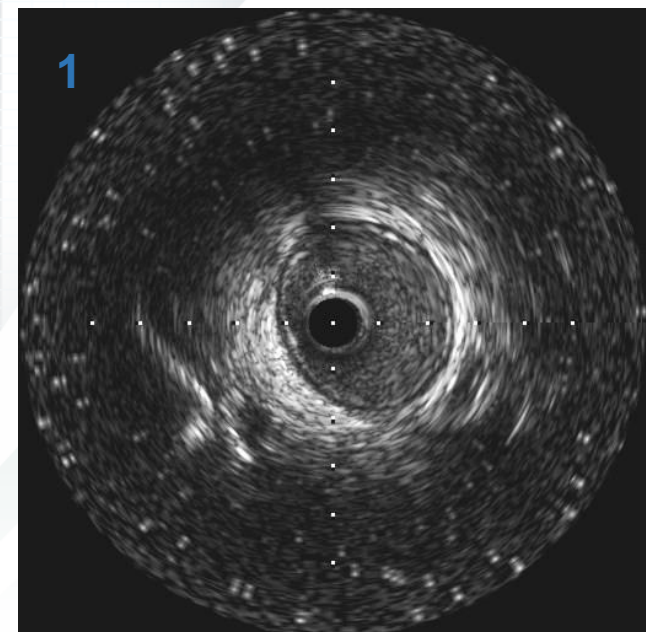
## Dimensions and Landing Zone

**After pre-dilatation!!!**



**Distal edge**

**Proximal edge**



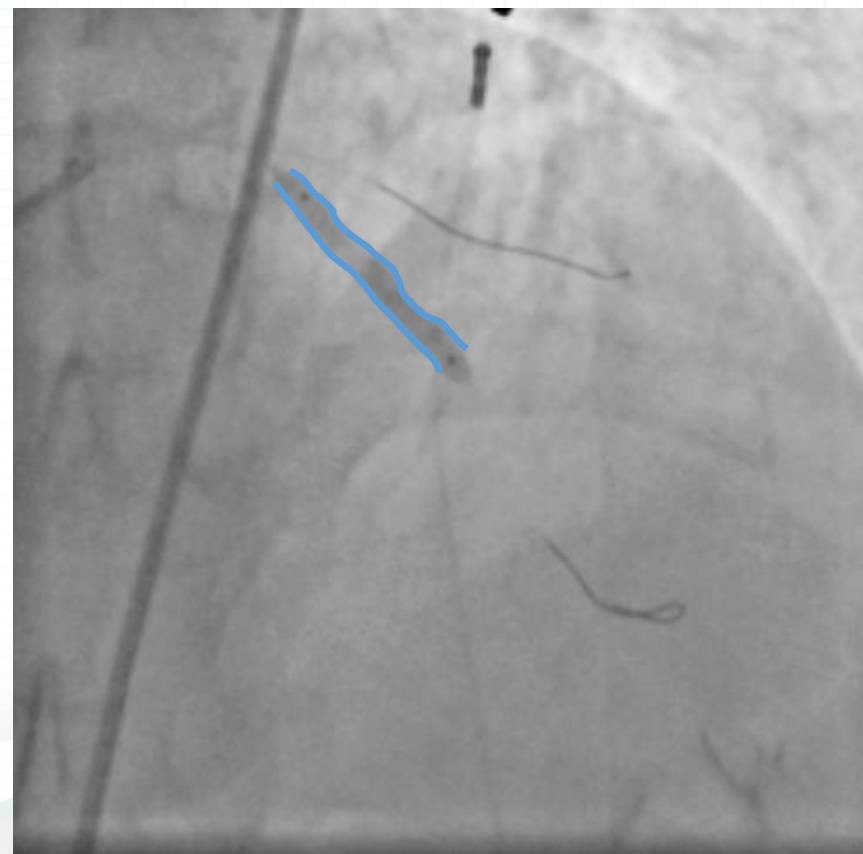
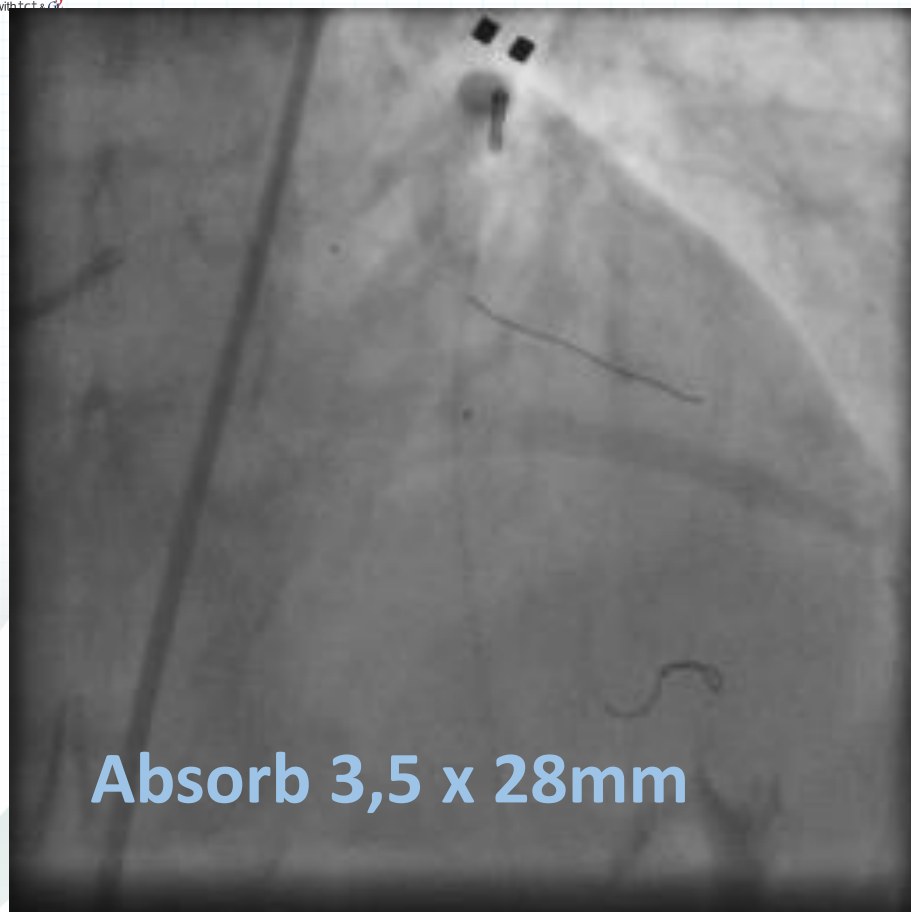


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*First BRS*

**Dog bone sign!!!**



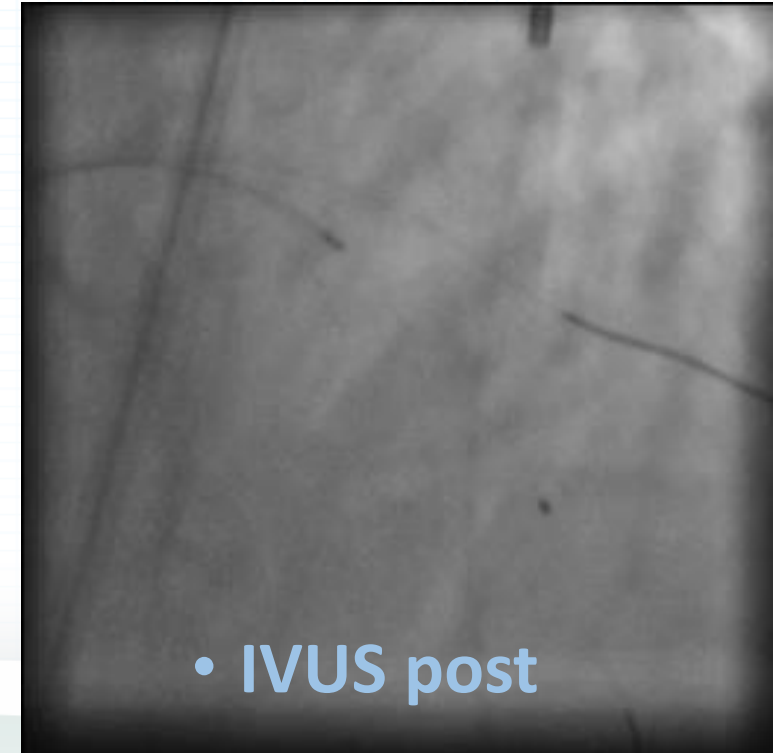
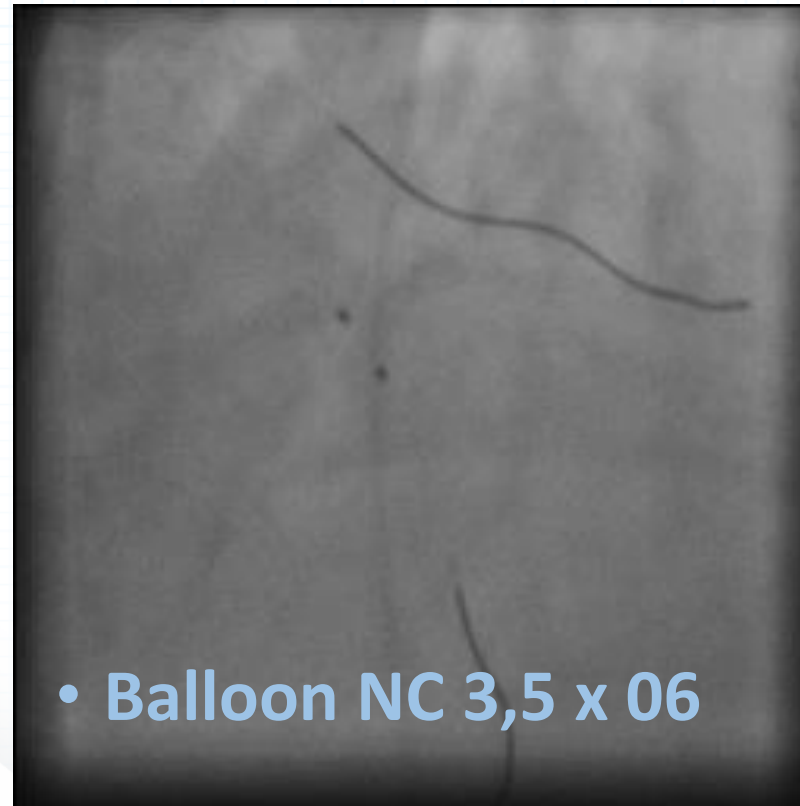




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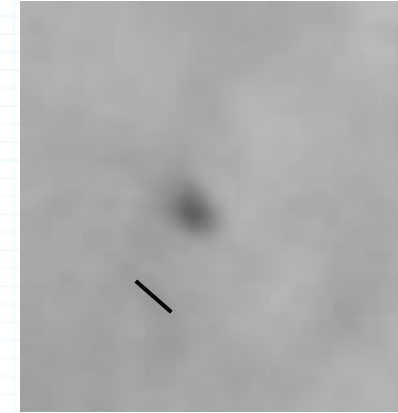
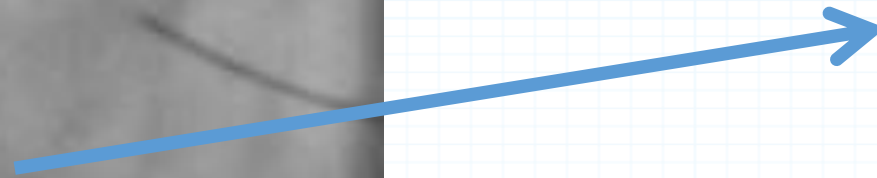
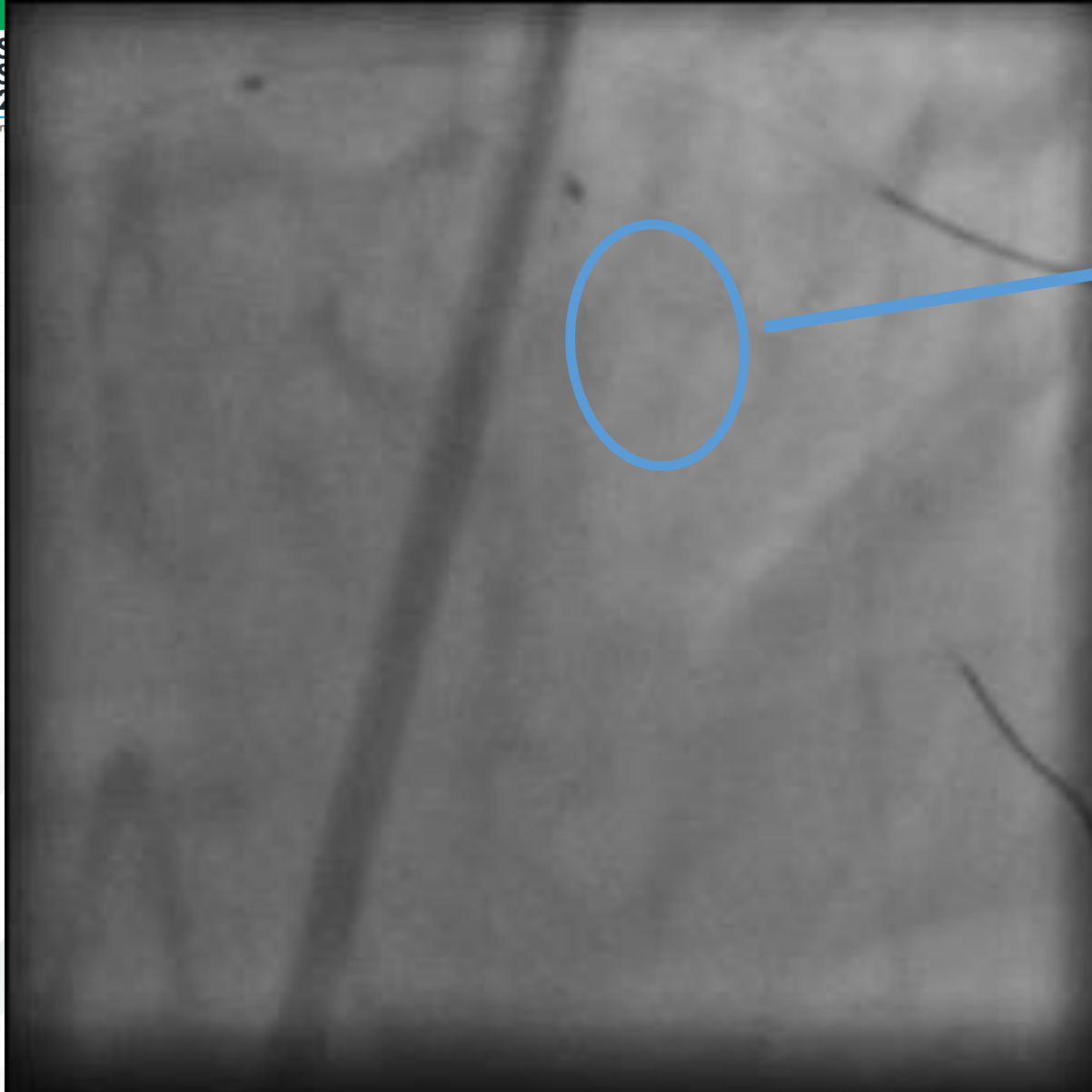
*High pressure is not a problem, larger size is a problem!!!*



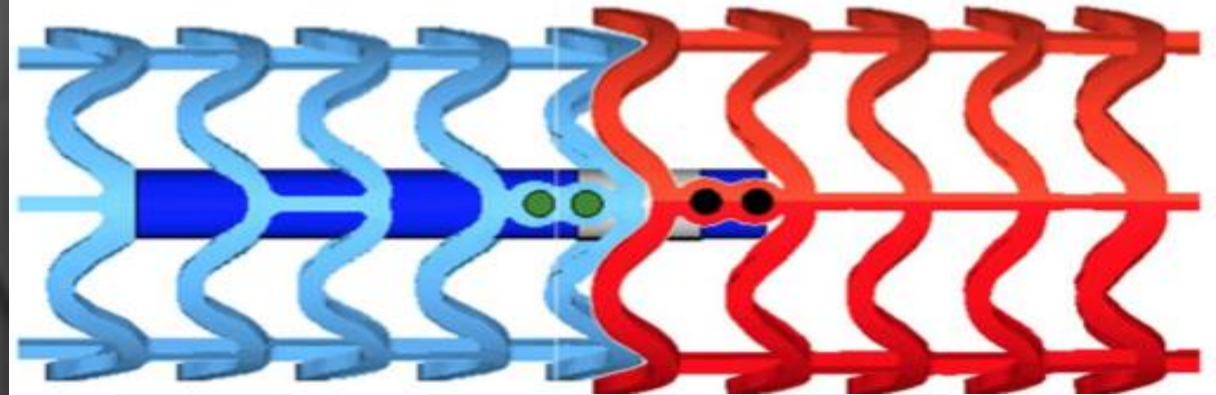
- **High pressure post-dilatation** with appropriate NC balloon



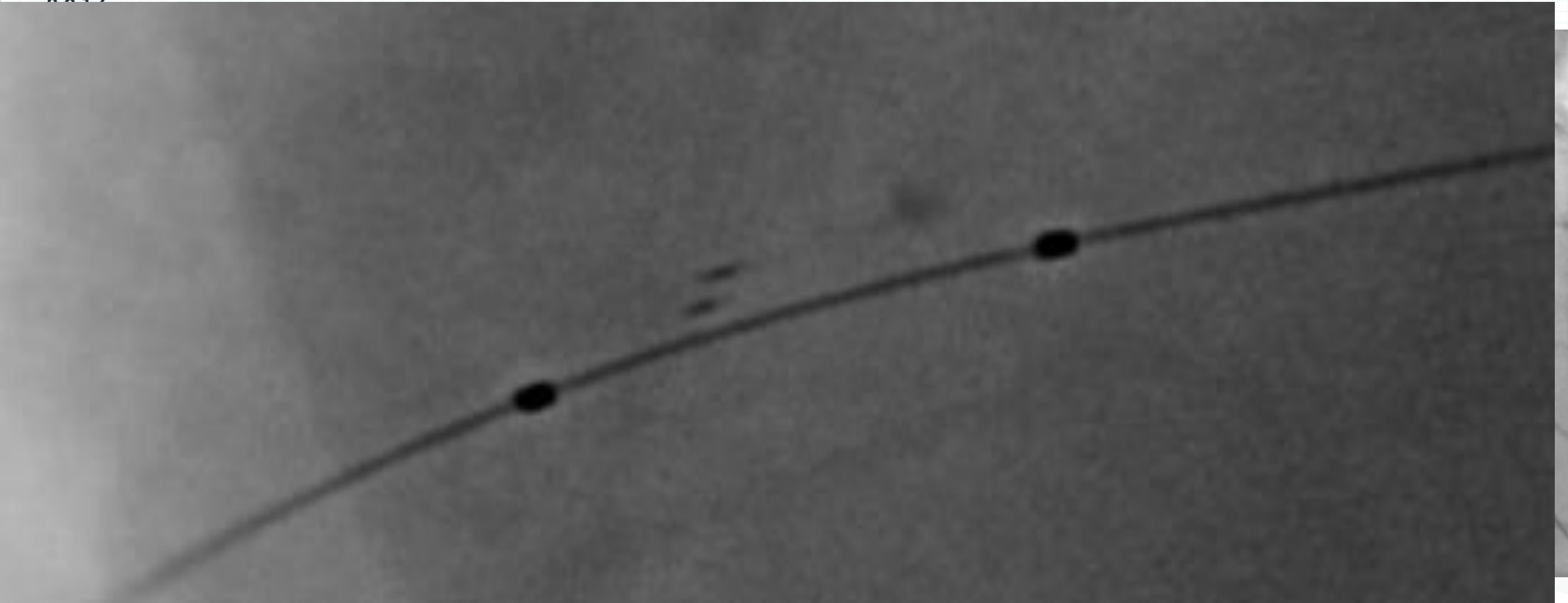
# Scaffold overlap considerations



Scaffold to Scaffold



NO or MINIMAL OVERLAP



- Full endothelialisation is slower at overlap segments



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## Post - dilatation



• **Guideliner**

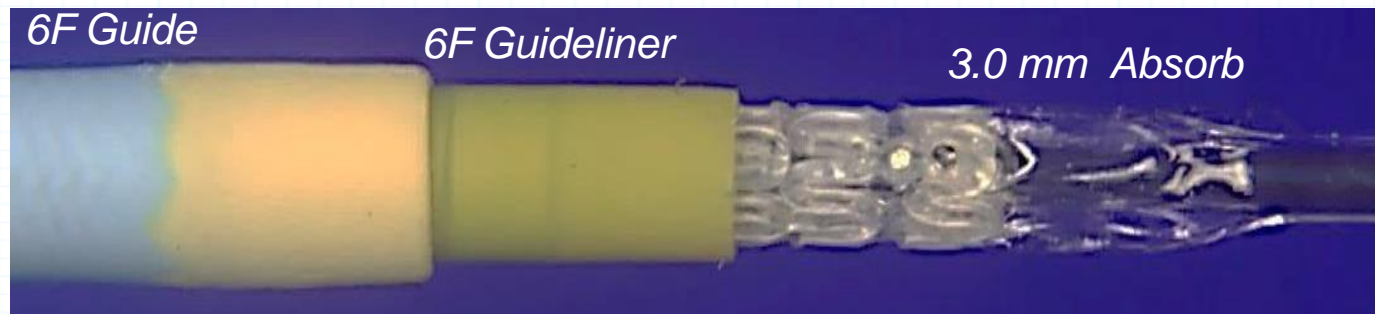


• **Balloon burst**



**NC balloon 4,0 x 06mm**

- **Guideliner facilitates BRS implantation**



1. 2.5 or 3.0mm Absorb can be preloaded in a 6F Guideliner (3.5mm Absorb is unlikely to pre-load)

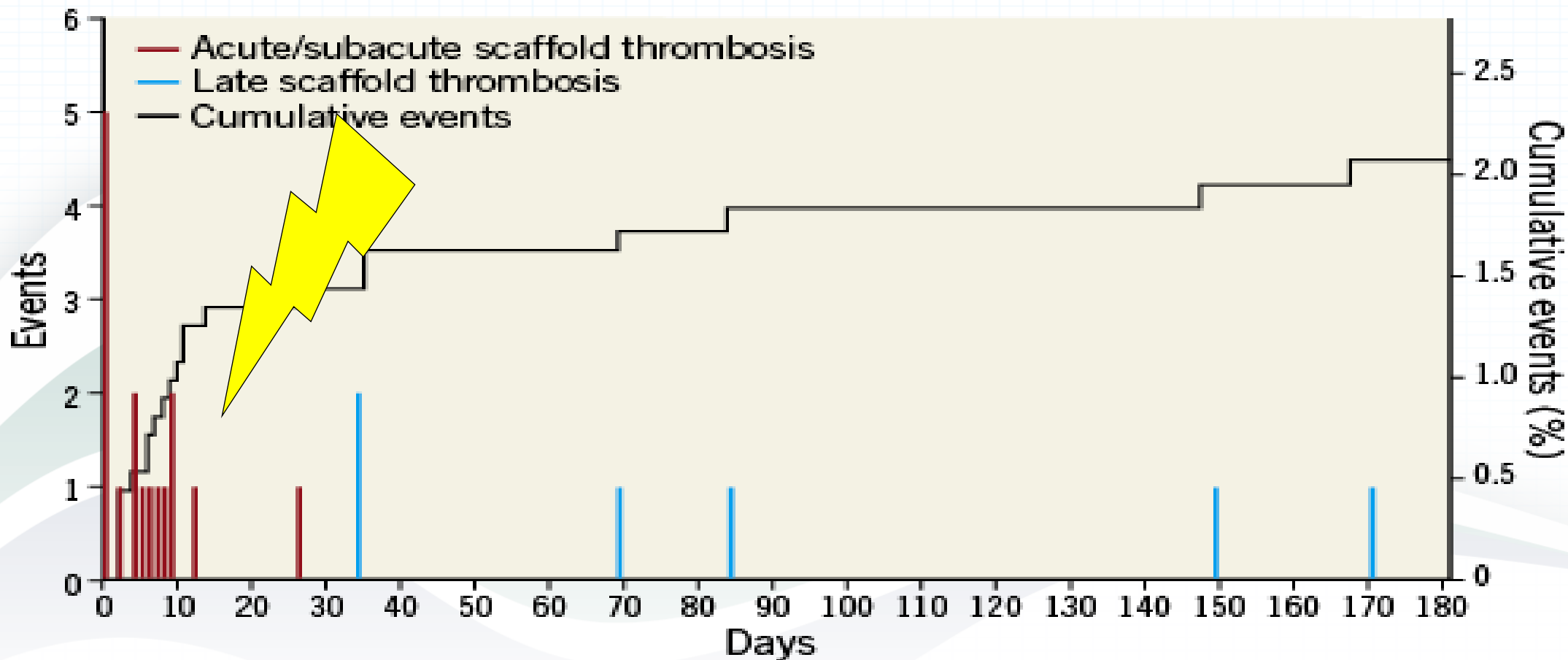


2. If the Guideliner is advanced into the artery without preloading, passage of a 2.5 or 3.0mm Absorb may be obstructed at the proximal ostium



**GHOST EU Registry – N = 1,189; 10 EU centers –**

**Distribution and Cumulative Incidence of Scaffold Thrombosis**



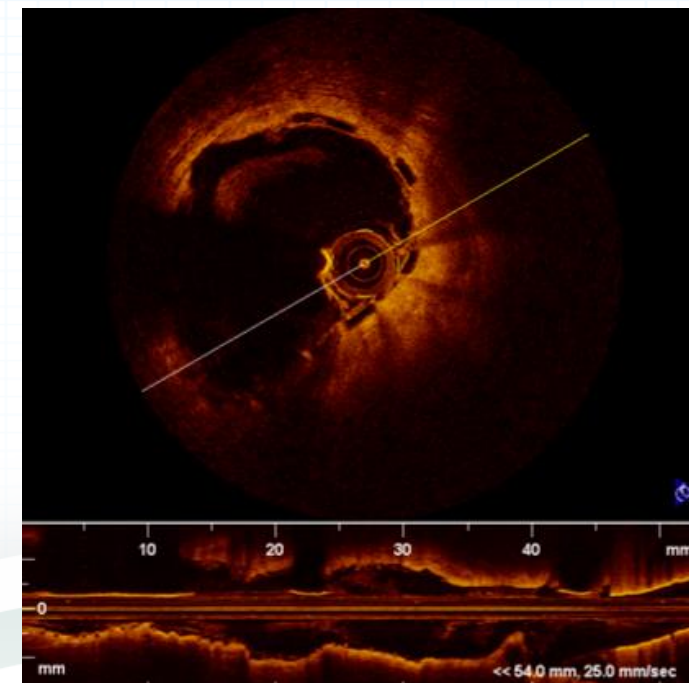
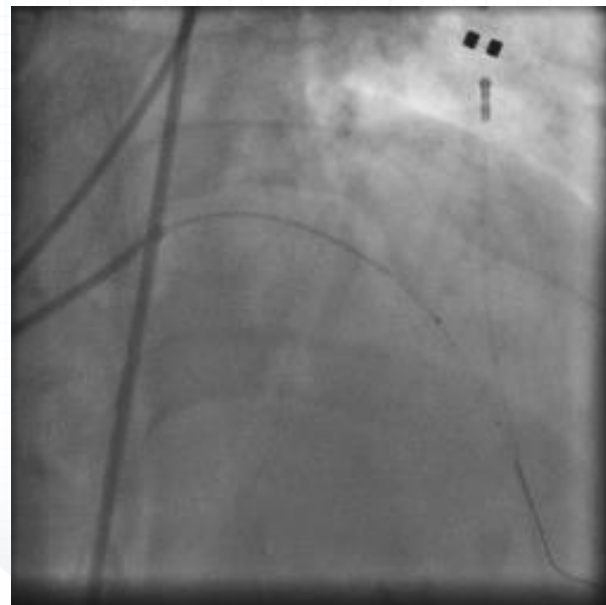
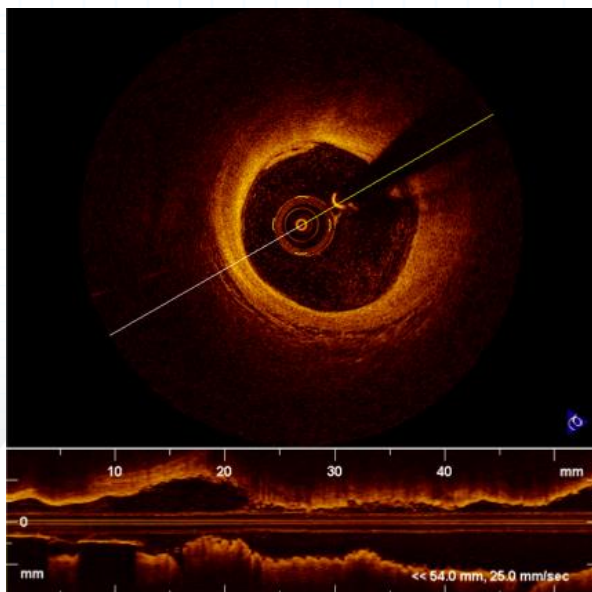


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## STRUCTURAL INTEGRITY

## Final Scaffold Diameter



**Incomplete Apposition**

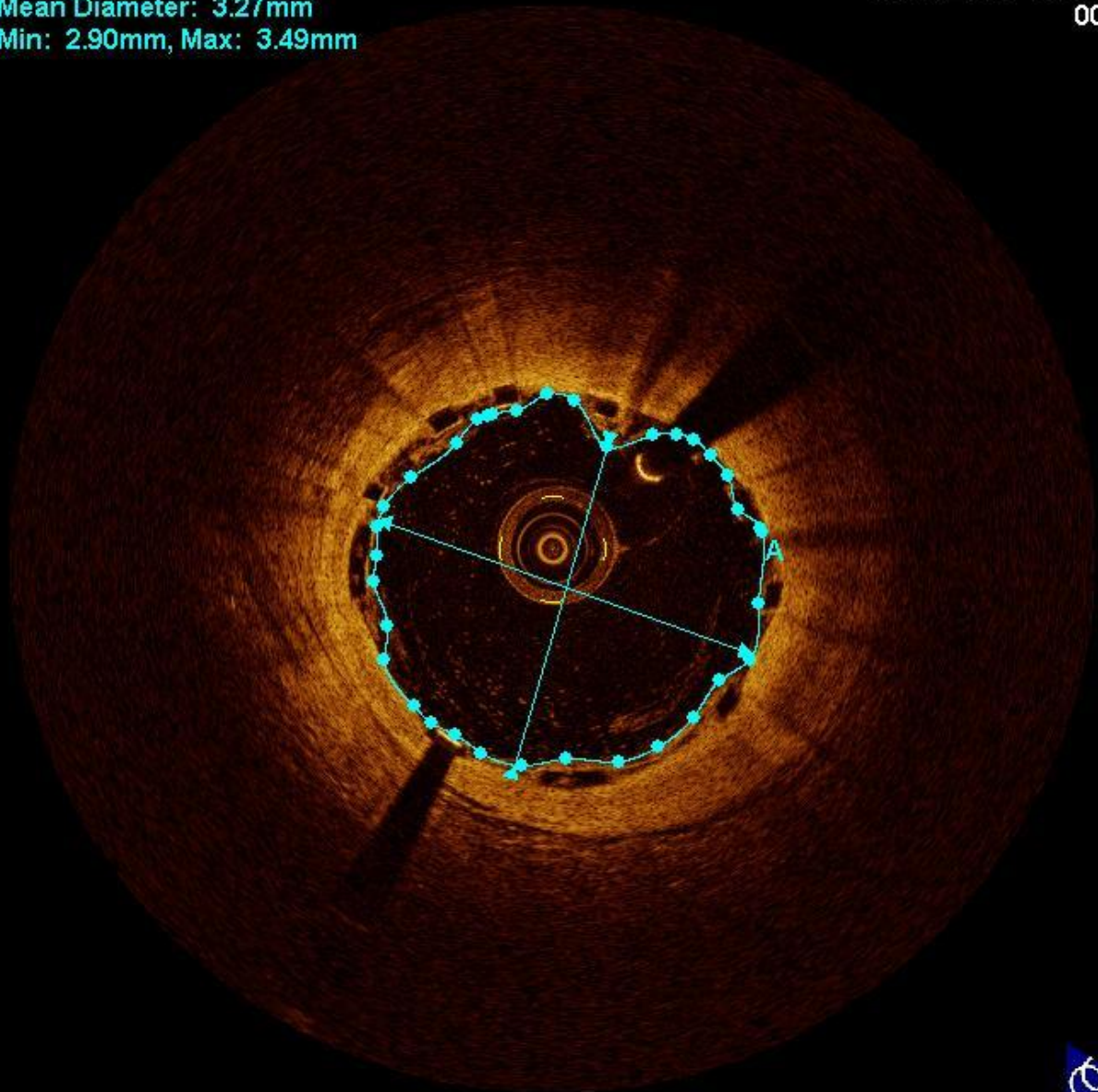
**Overlap**



# OCT evaluation

A Area: 8.44mm<sup>2</sup>  
Mean Diameter: 3.27mm  
Min: 2.90mm, Max: 3.49mm

05/09/2015 11:18:40  
0001



A Area: 12.23mm<sup>2</sup>  
Mean Diameter: 3.94mm  
Min: 3.67mm, Max: 4.20mm

05/09/2015 11:18:41  
0001

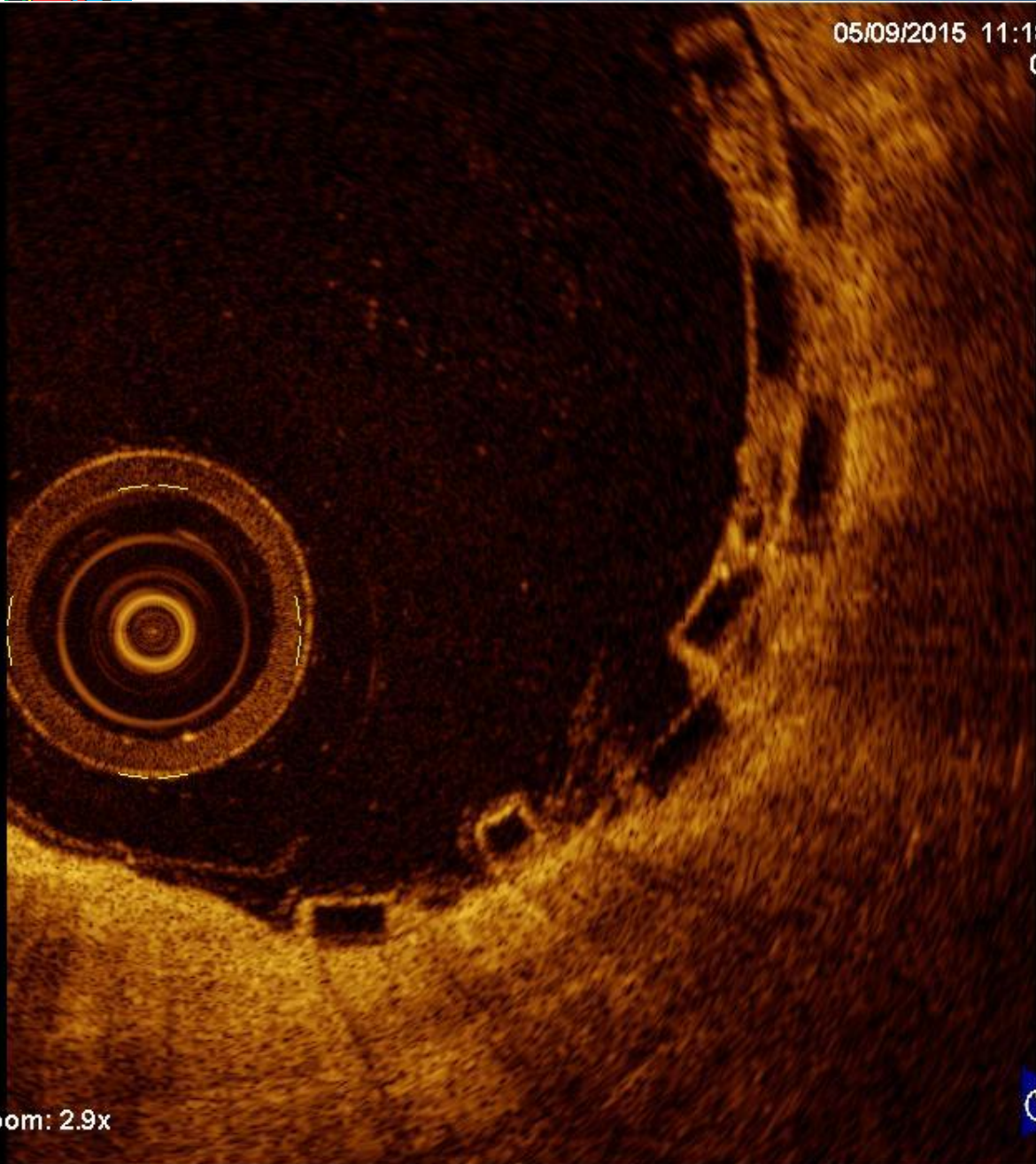






# OCT evaluation

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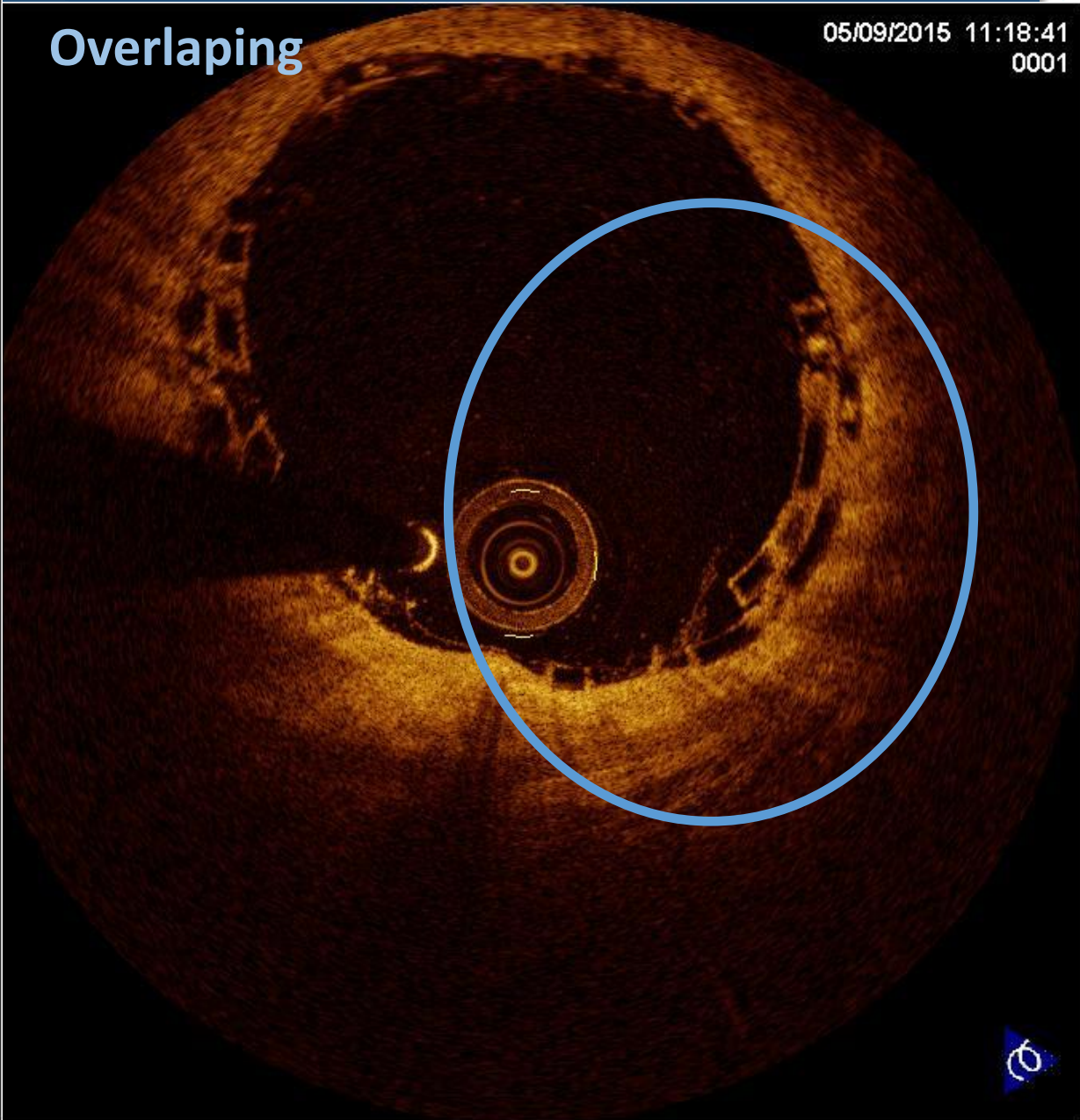


Zoom: 2.9x



Overlapping

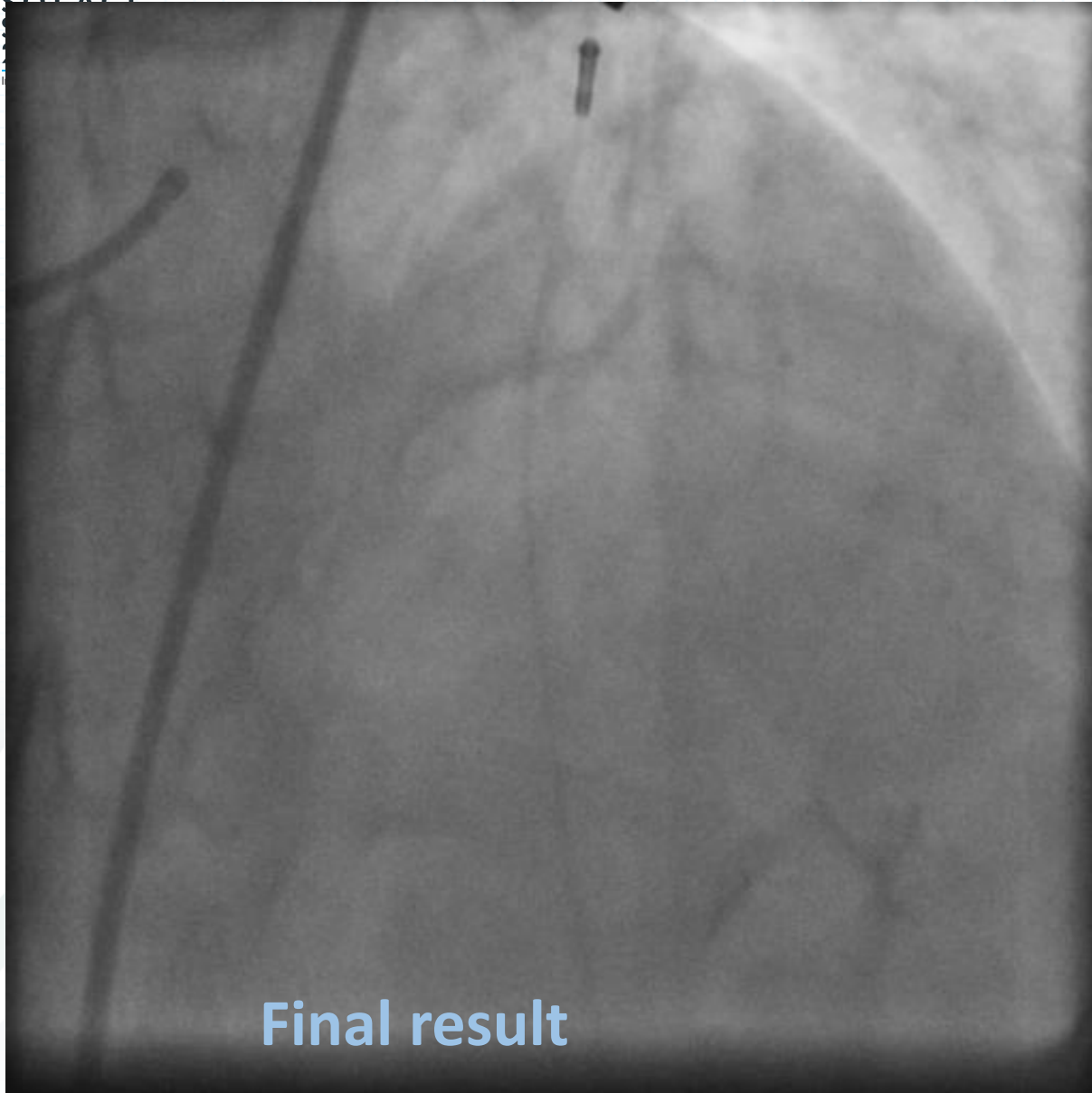
05/09/2015 11:18:41  
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# Final result and Follow up



Final result



Follow up





- **Do a good job!**
  - In complex lesions consider use of imaging (OCT/IVUS)
  - Lesion preparation
  - Always postdilate
  
- **The future is promising!**
  - **Low strut thickness**
  - **High resistance to fracture**
  - **Crossing profile**



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Obrigado!!!

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