



Instituto DANTE PAZZANESE  
de Cardiologia

# Management of Intermediate Coronary Lesion in an ACS Patient: Use of OCT for Diagnosis and a PCI-Guiding Tool

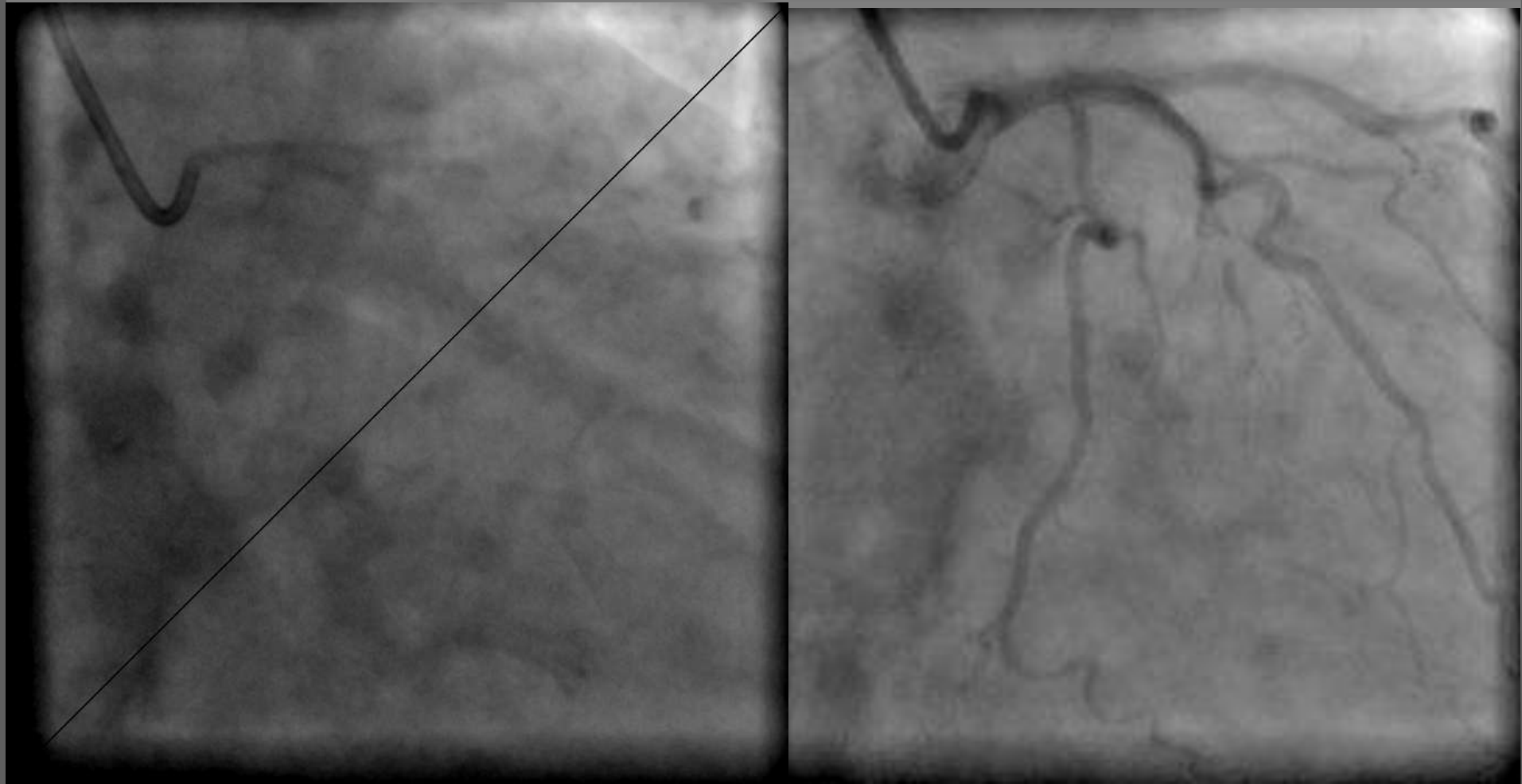
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# Case Summary

- Male, 65 years
- Former smoker, Hypercholesterolemia
- Presented with ACS (inferior ST-Segment elevation) who underwent thrombolysis (streptokinase) with criteria of reperfusion 3 days ago.
- EKG SR, abnormalities of ventricular repolarization in inferior leads
- Asymptomatic at the time
- Referred for invasive stratification after ACS.

# Coronary Angiography

## Left Coronary System



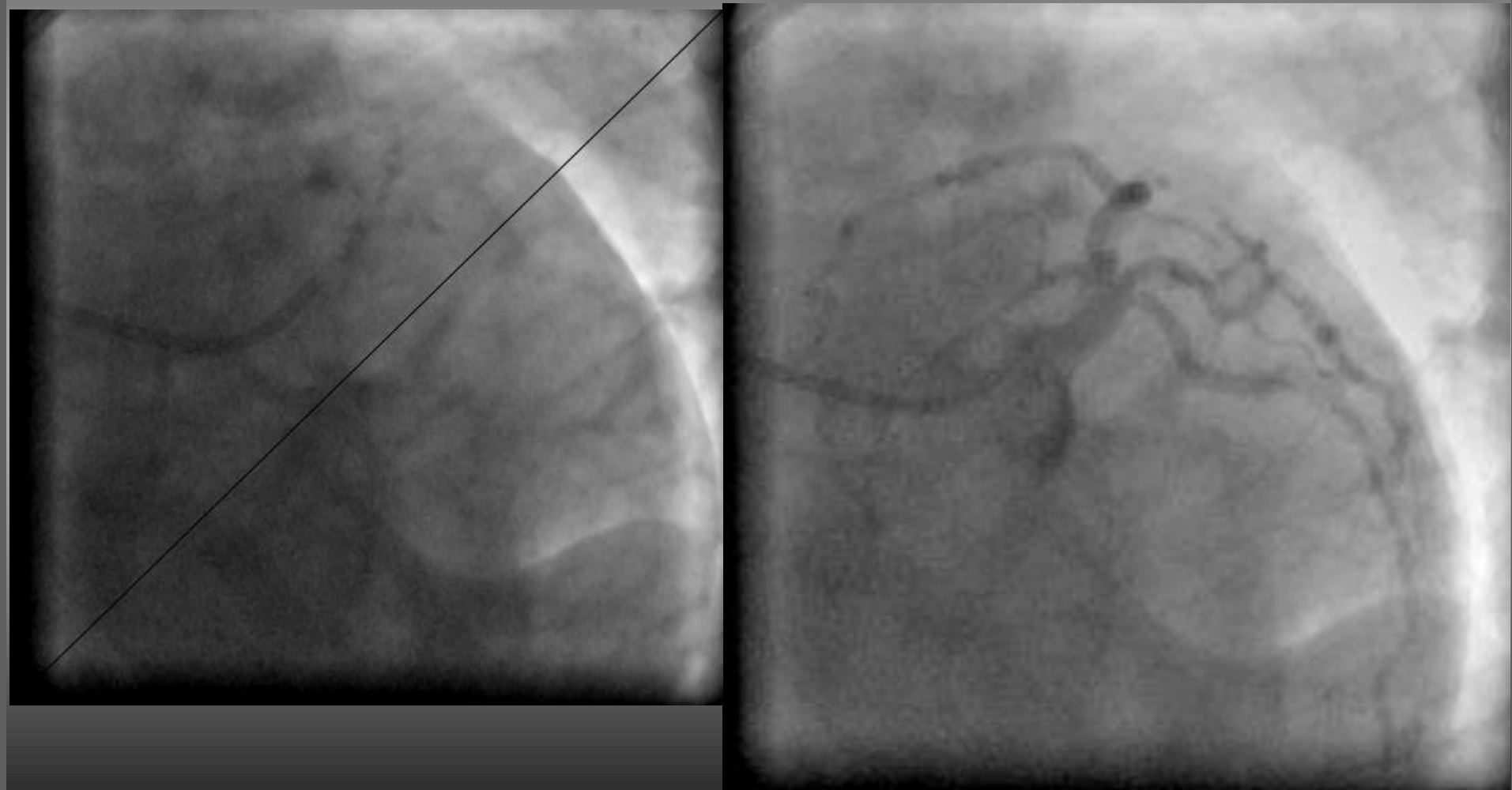
# Coronary Angiography

## Left Coronary System



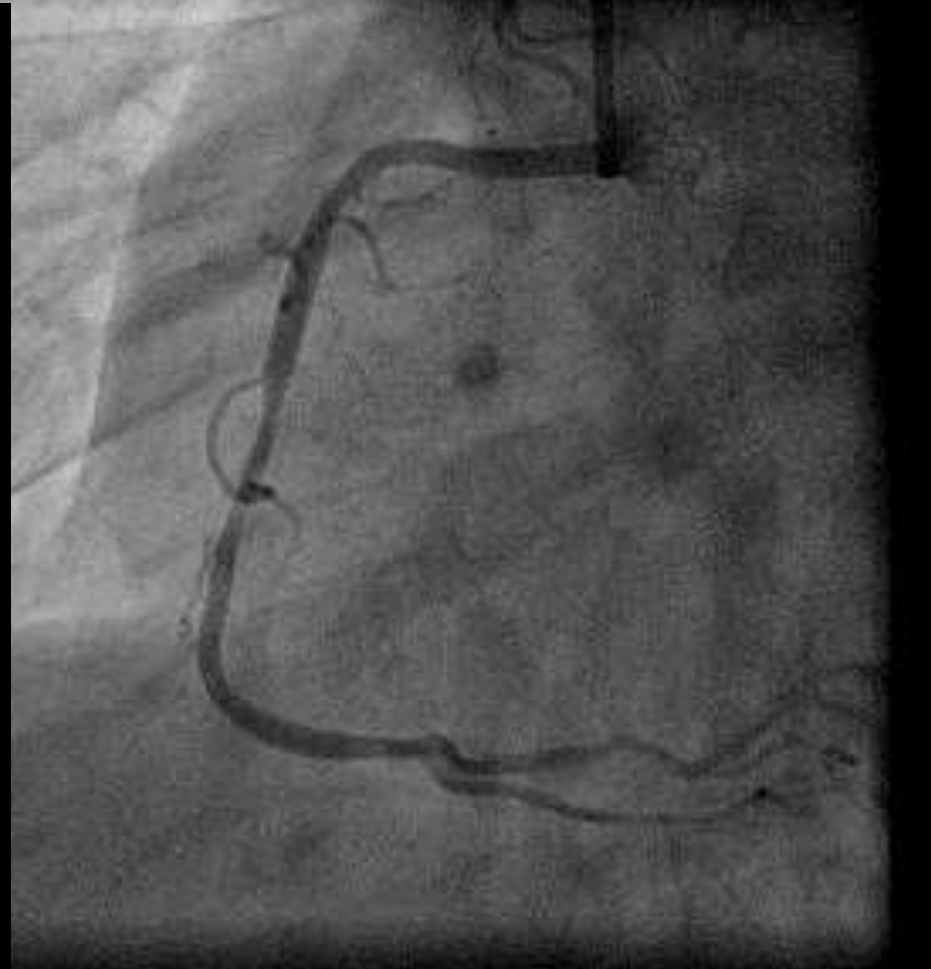
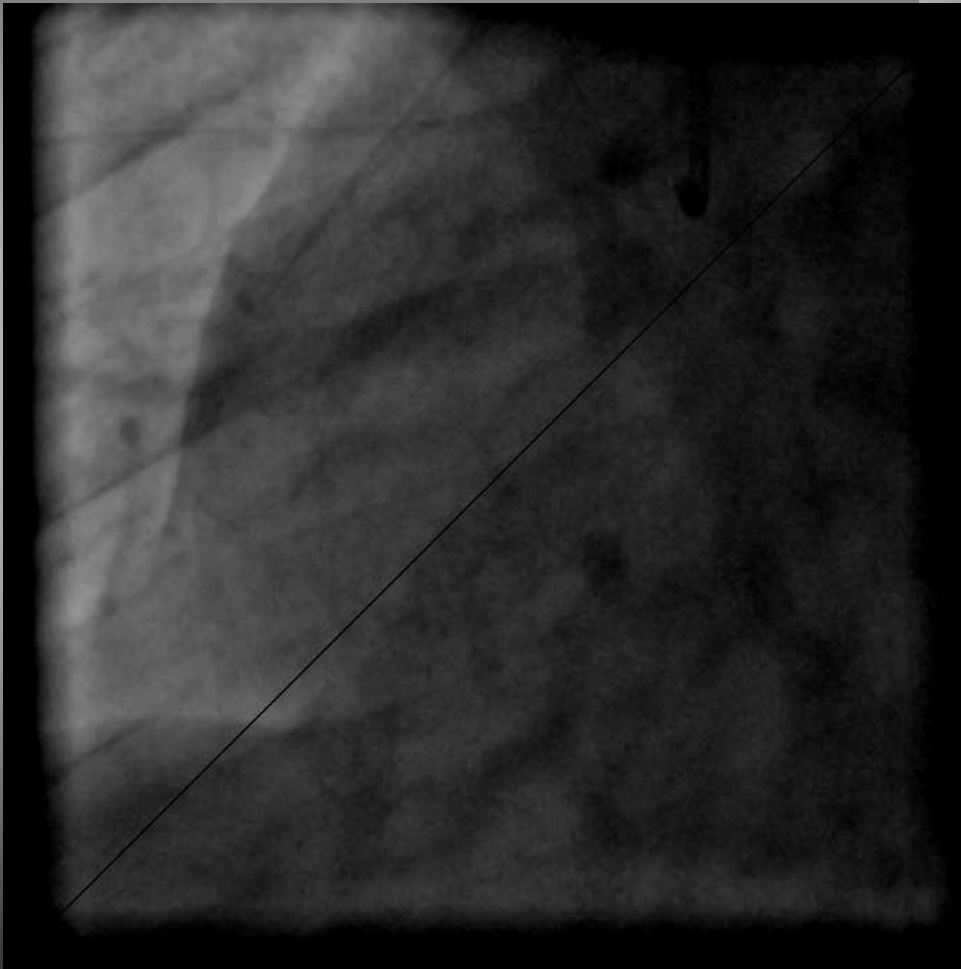
# Coronary Angiography

## Left Coronary System



# Coronary Angiography

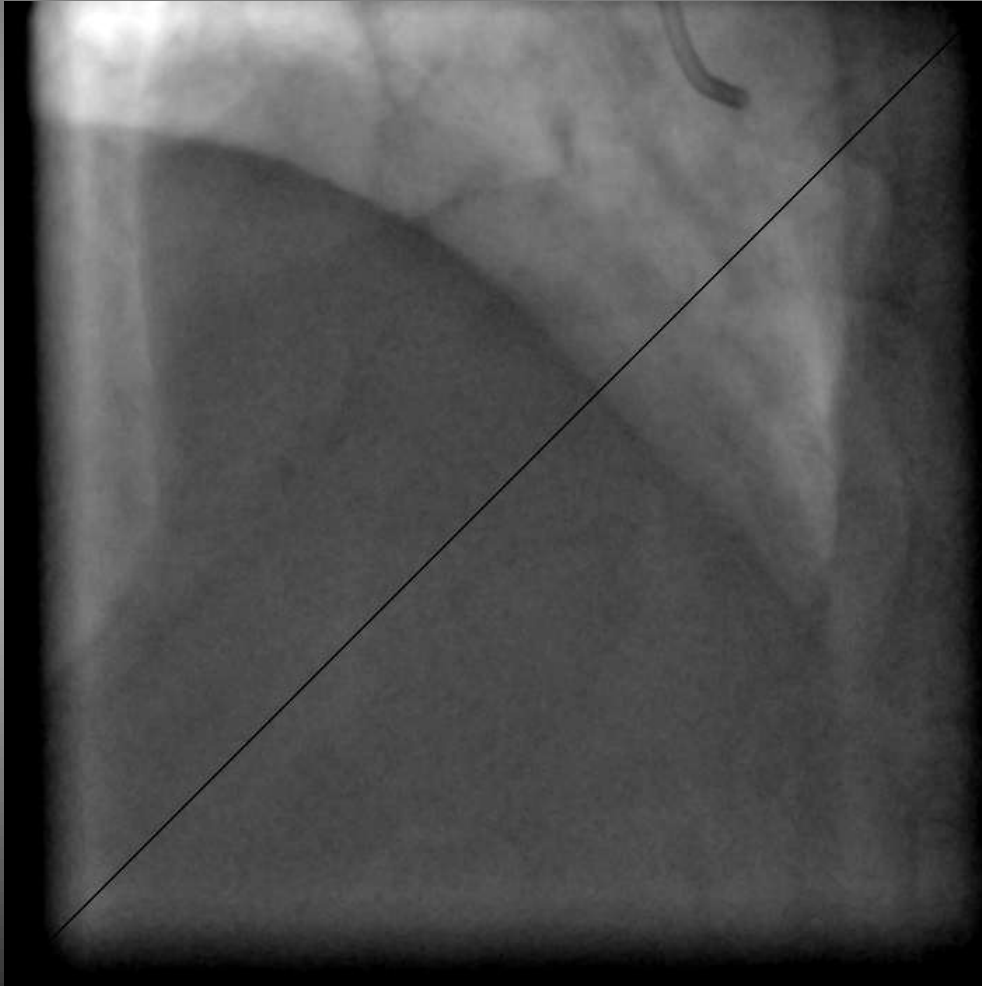
## Right Coronary System





# Coronary Angiography

## Right Coronary System

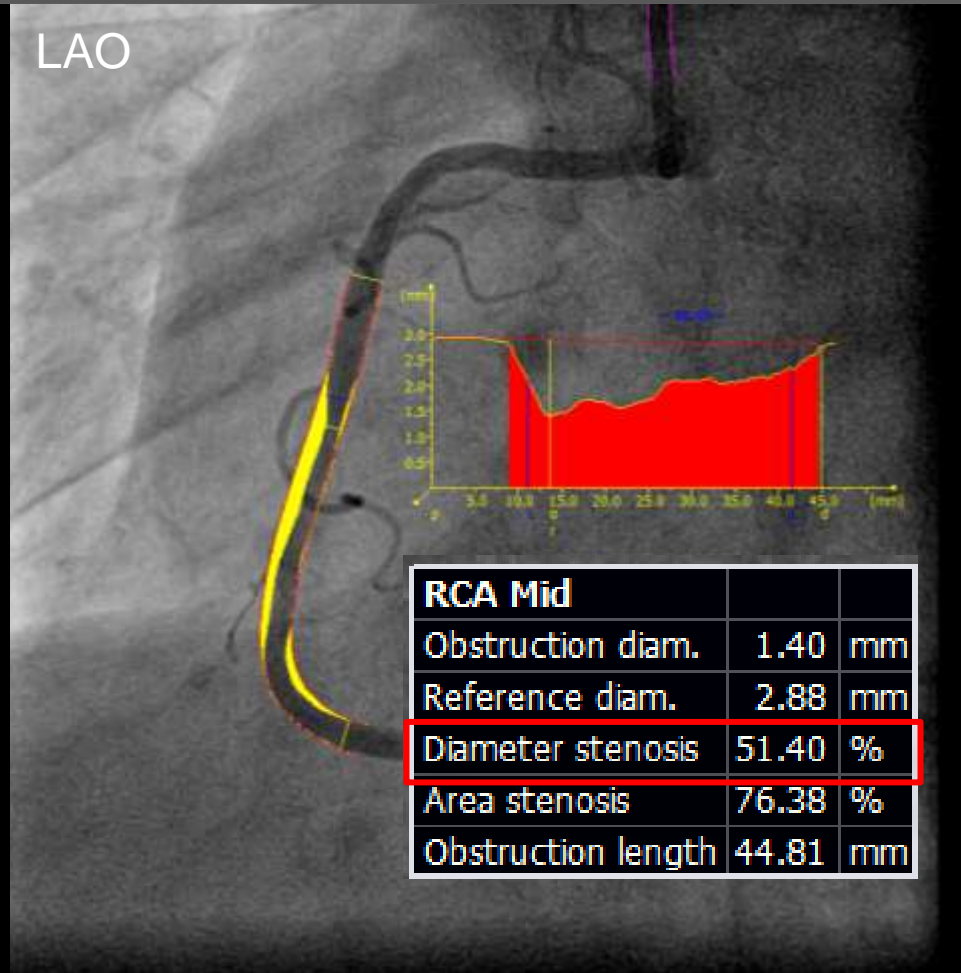
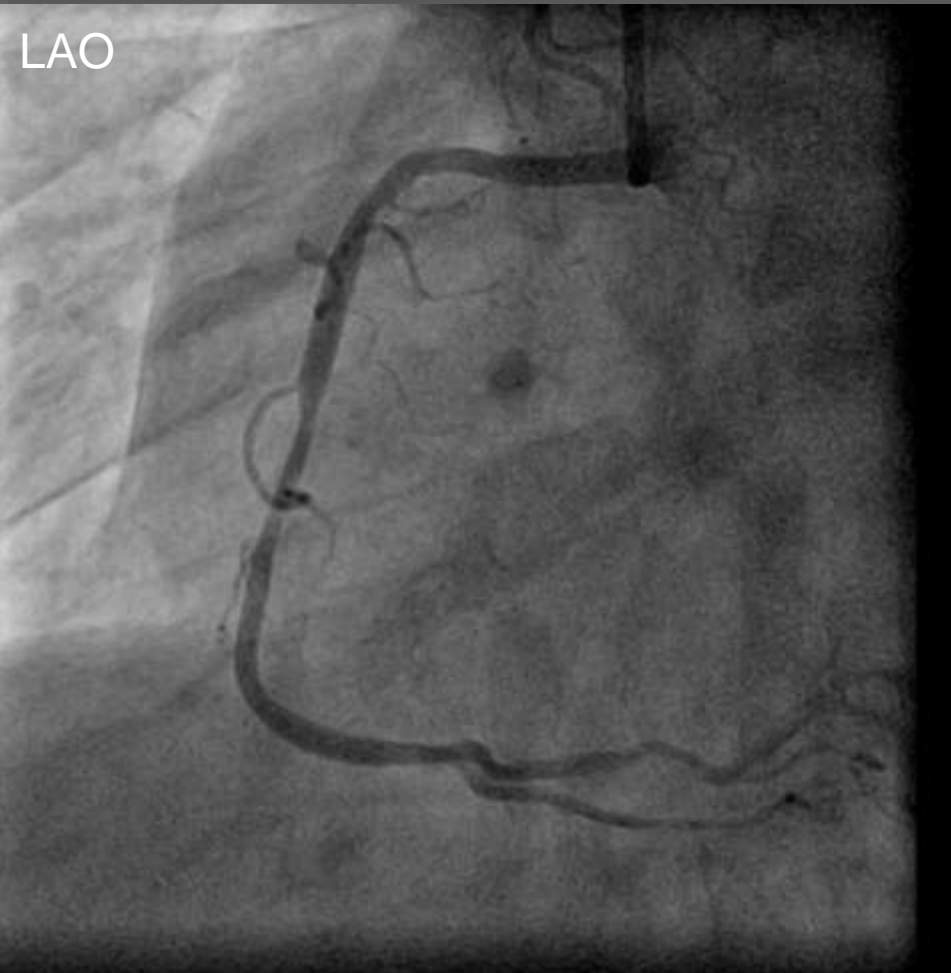


# Left Ventriculogram



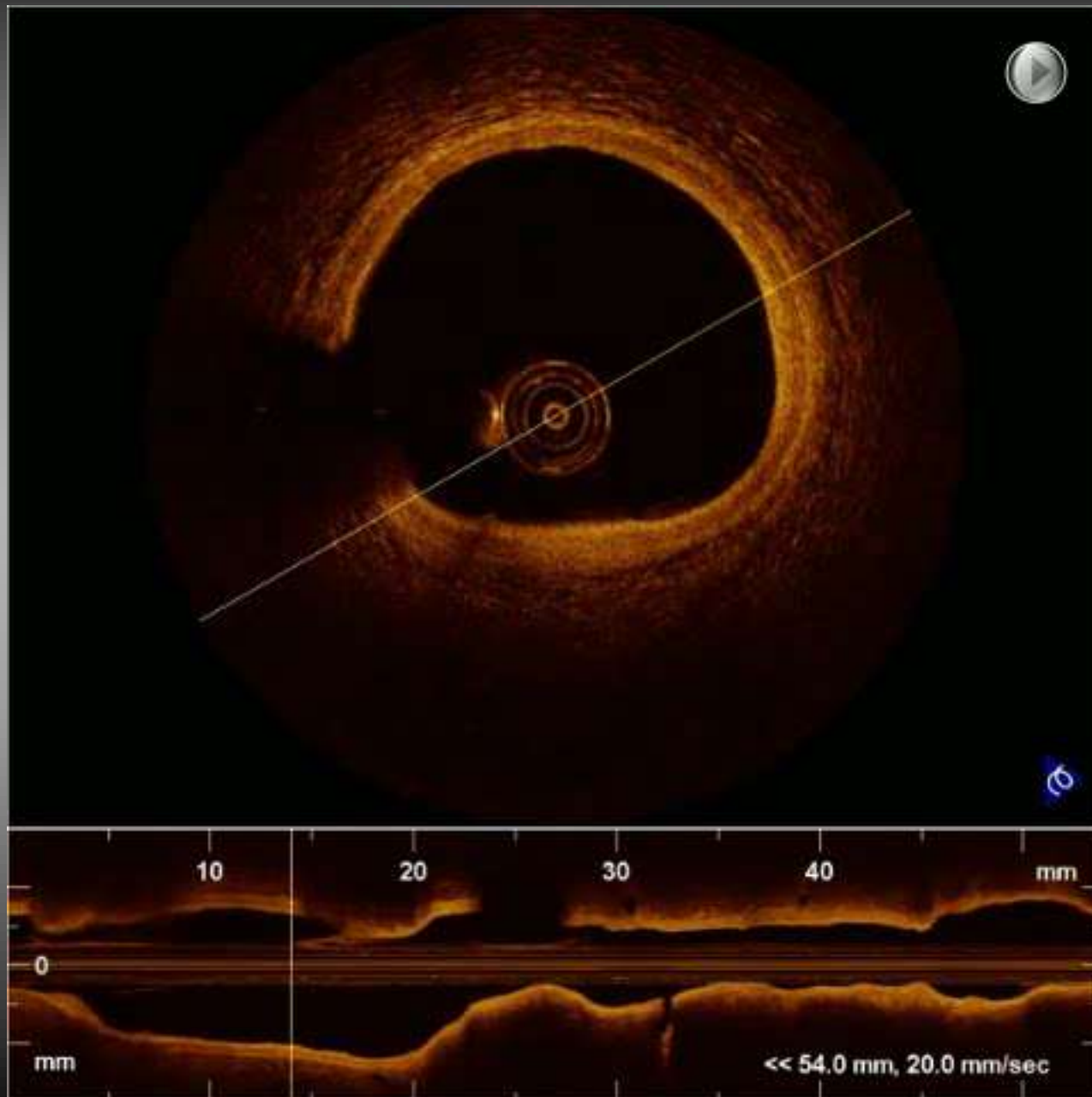


# Quantitative Coronary Angiography

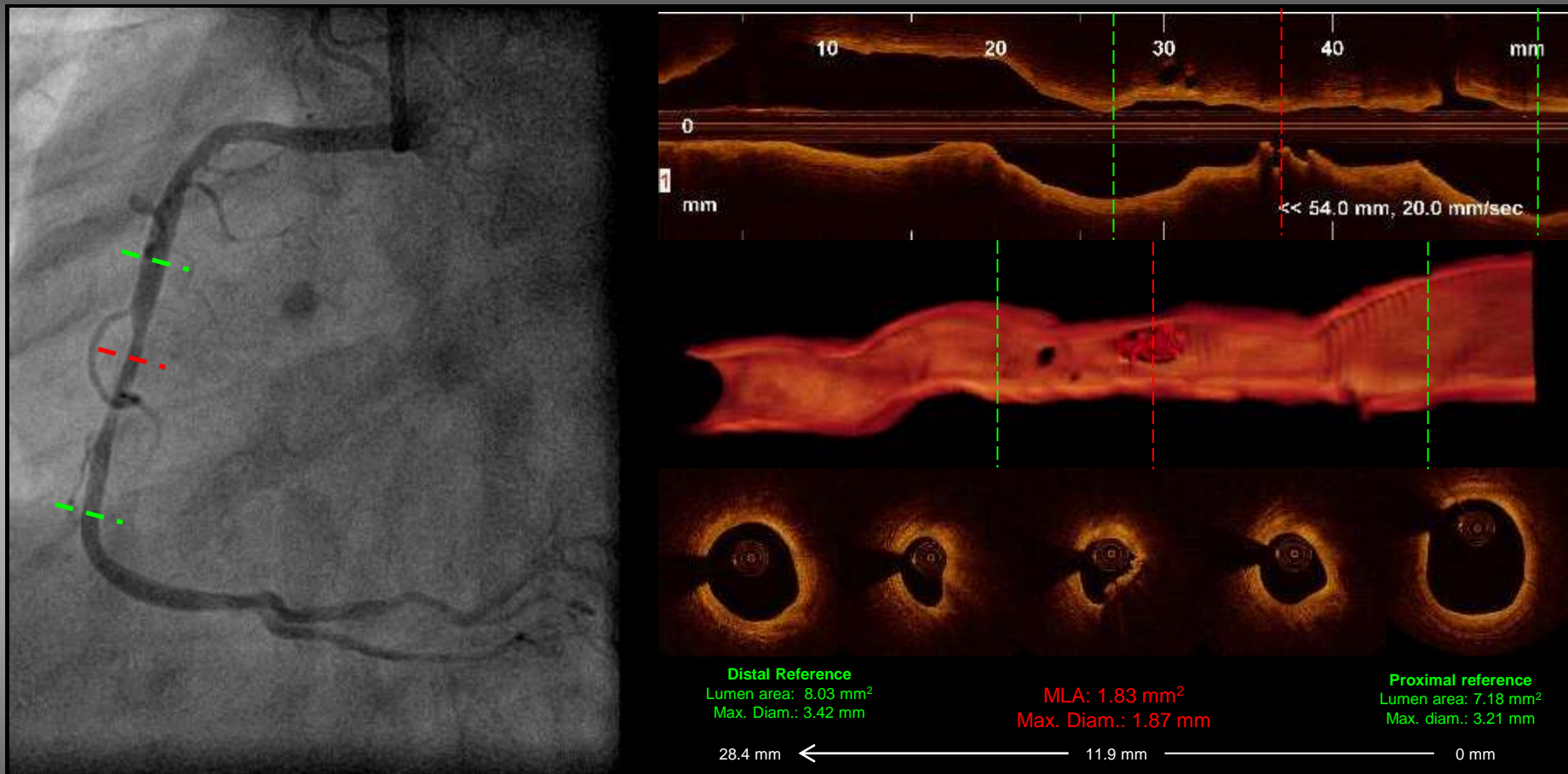


**51.4% Diameter Stenosis**

# OCT Assessment of RCA Lesion

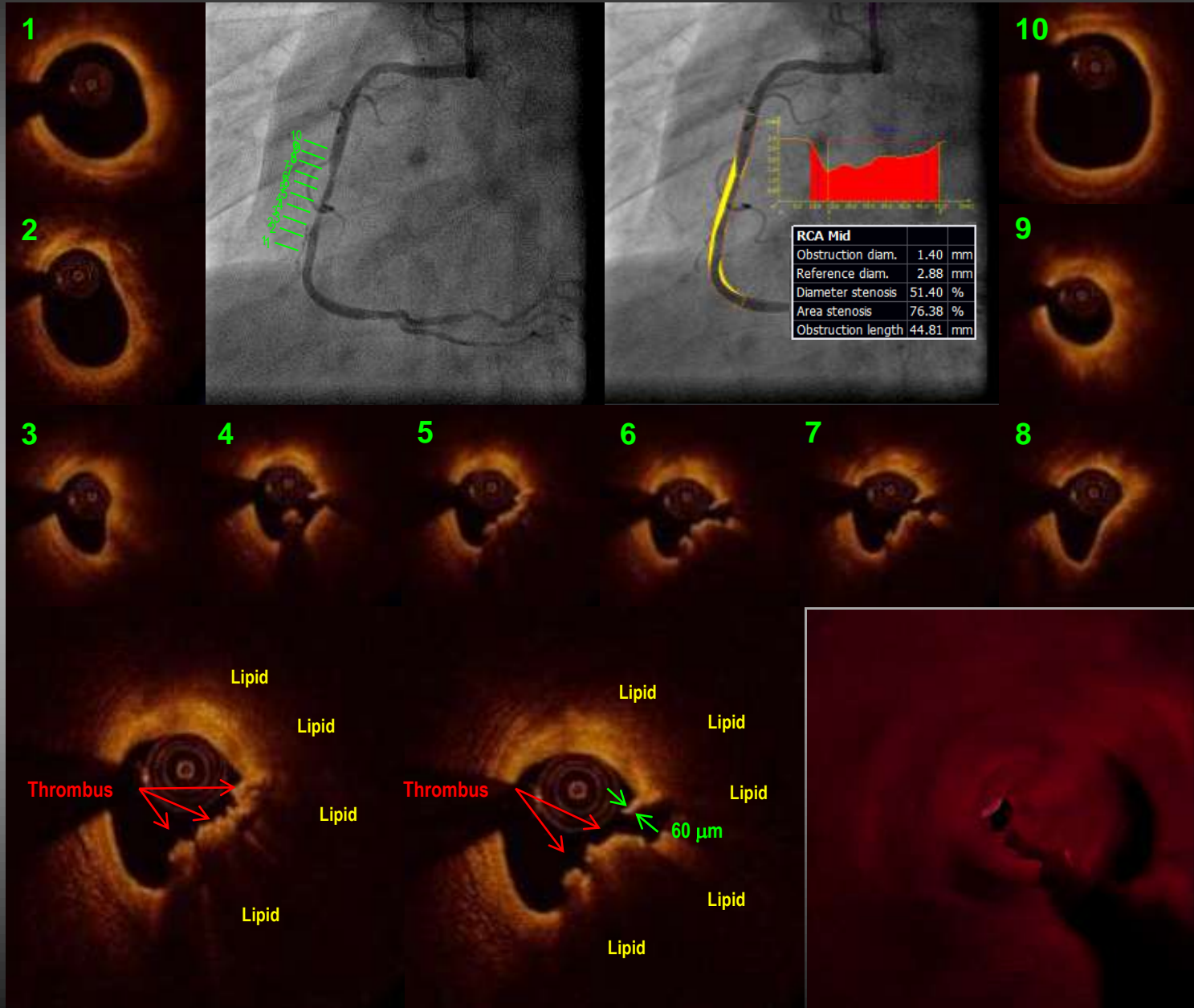


# Stenosis Quantification by OCT



**Area Stenosis = 84.25%**  
**Diameter Stenosis = 43.6%**

# OCT Qualitative Assessment of RCA Lesion





# PCI of RCA with ZES 3.0x30mm

Stent Positioning

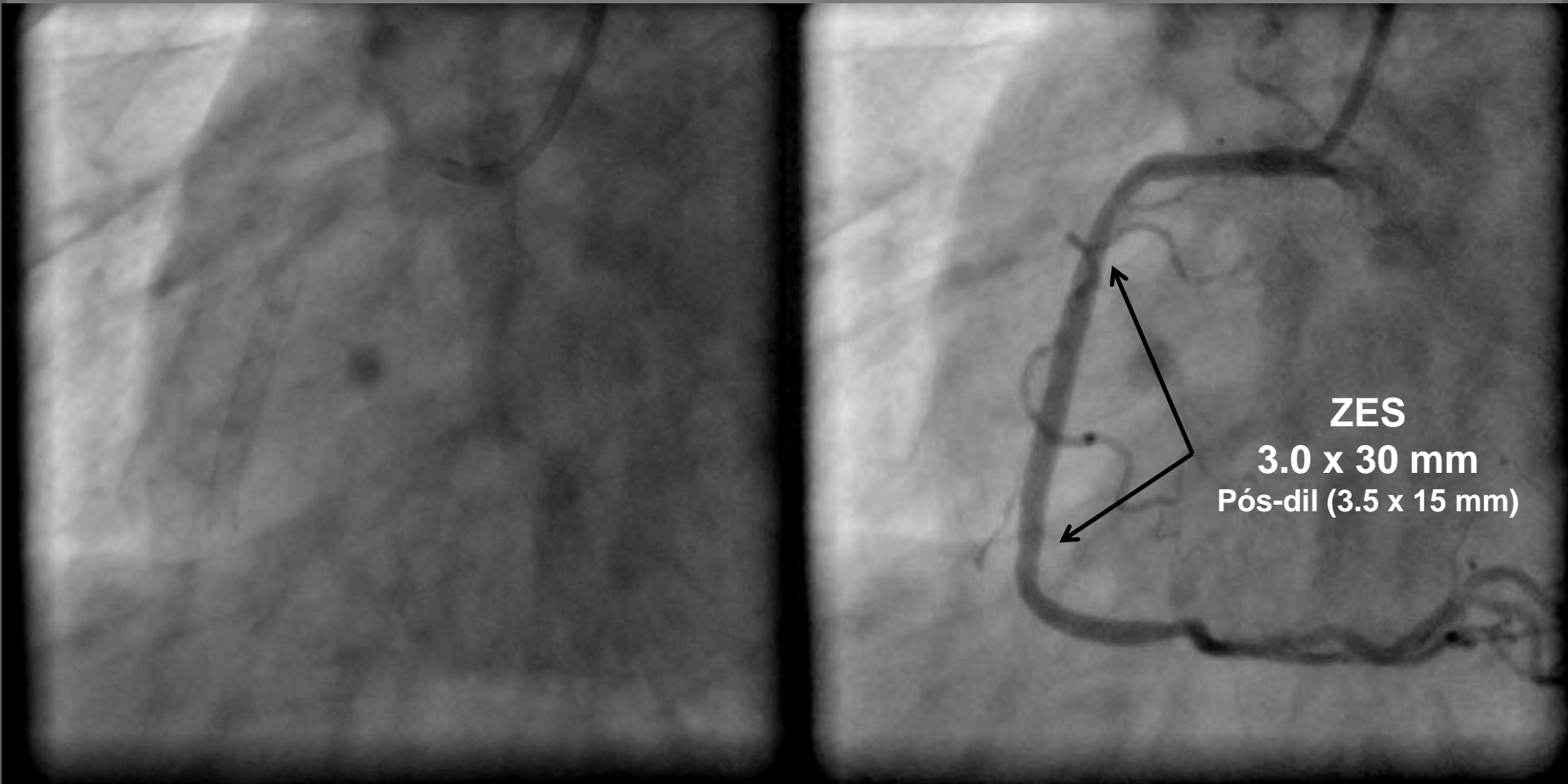
Stent  
Deployment  
@ 10 atm

Control Angio.

Post-Dil  
NC 3.0x15 mm  
@ 22 atm

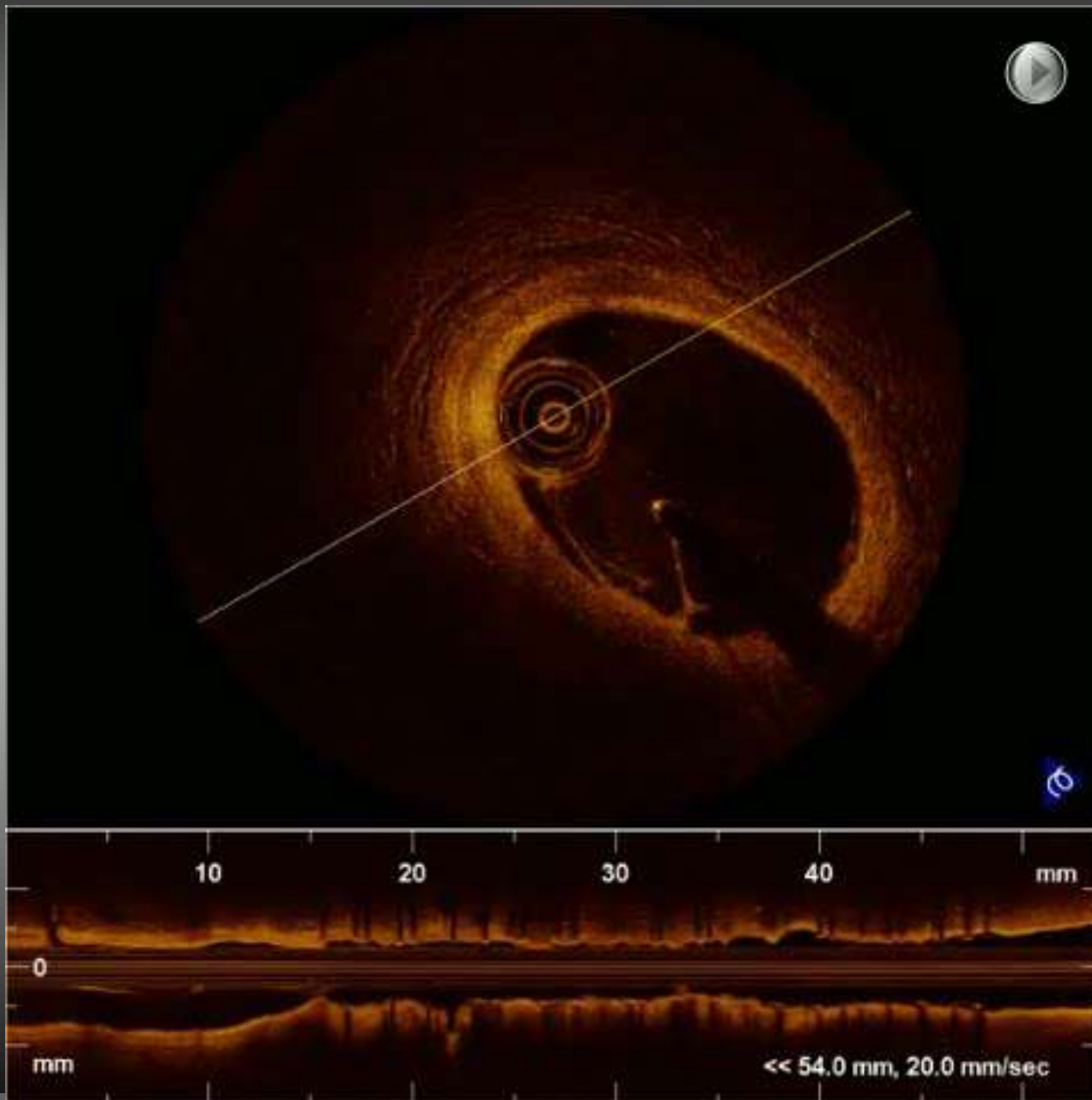


# Final Angiographic Result

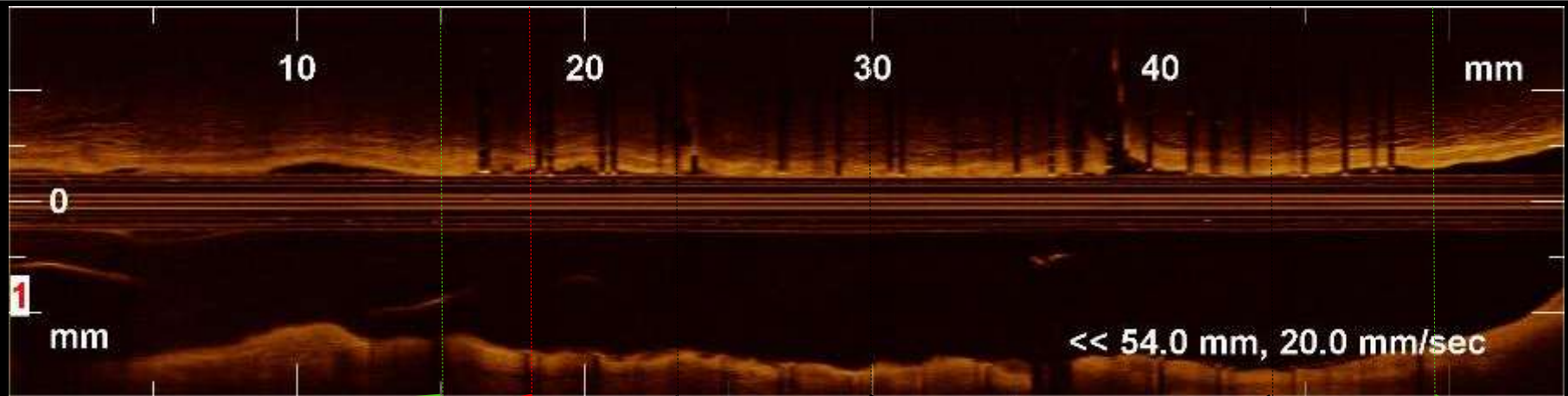




# OCT Check Post-PCI



# Final Result – Quantitative OCT Evaluation



Distal Ref.

MSA

Proximal Ref.

LA: 5.13 mm<sup>2</sup>  
Diam: 3.21 mm

SA: 5.57 mm<sup>2</sup>  
Diam: 3.28 mm

SA: 5.65 mm<sup>2</sup>  
Diam: 3.40 mm

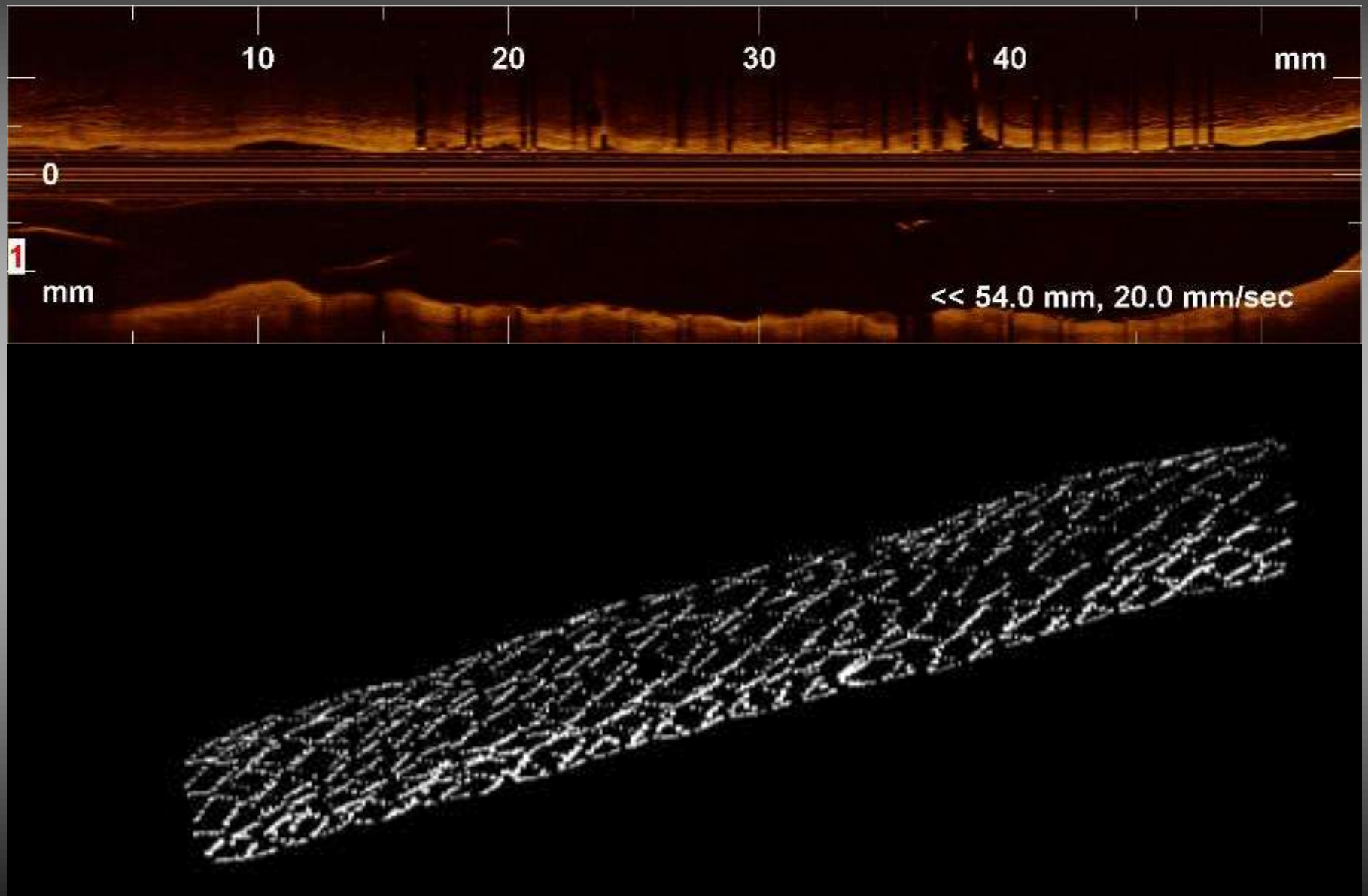
SA: 6.13 mm<sup>2</sup>  
Diam: 3.38 mm

SA: 6.30 mm<sup>2</sup>  
Diam: 3.32 mm

SA: 5.86 mm<sup>2</sup>  
Diam: 3.20 mm

Stent sizing by OCT was adequate with MSA only **1.45%** bigger than the mean LA references – highlighting the perfect matching to normal vessel lumen size!

# Final OCT Result – The Benefit of 3D-OCT



# Take-home message

- The assessment of angiographic intermediate lesions in ACS patients is a challenge:
  - Angiography → foreshortening; haziness
  - FFR → transient microvascular dysfunction → false negative results
  - IVUS → lacks resolution to resolve high-risk features (lipid, fibrous cap thickness, TCFA, plaque rupture, thrombus)
- In the present case, OCT assessment allowed for:
  - Accurate quantification of the stenosis severity
  - Accurate identification of lesion length
  - Accurate determination of the vessel lumen size
  - Accurate characterization of qualitative features of the culprit lesion
    - ✓ Large lipid content, thin FC , signs of FC inflammation → TCFA
    - ✓ Fibrous cap rupture with intraluminal red thrombus
  - Proper selection of stent size (diameter and length)
- OCT Assessment Post-PCI allowed for:
  - Accurate assessment of stent expansion and apposition
  - Confirmation of lack of complications (thrombosis, dissection)

# Take-home message

- In the current case, the decision to perform PCI of RCA was based not only by the stenosis severity quantification, but mostly by the identification of high-risk features of the culprit plaque by OCT.
- However, we acknowledge the lack of evidence for the management of such complex lesions:
  - PCI vs. Optimal medical Tx



# OBRIGADO !



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