



# OCT guidance for the management of stent thrombosis at coronary bifurcation

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**Patient History**

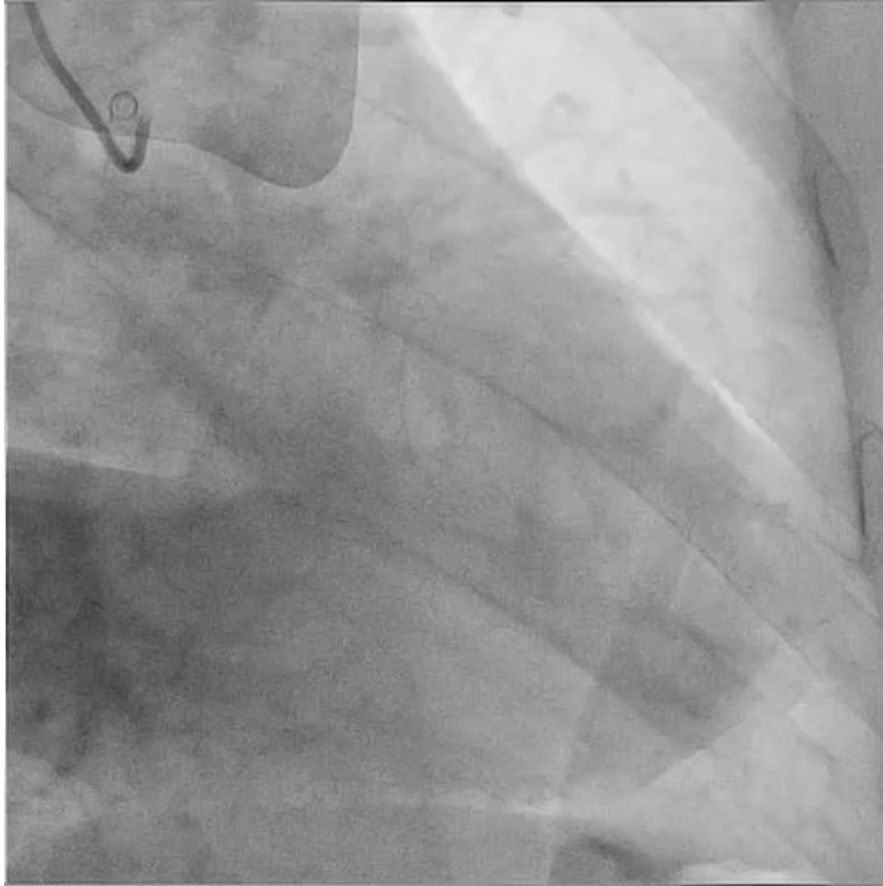
- 59-year-old male
- Current smoker (1 pack/day)

**Co-morbidities**

- NSTEMI-ACS 1 week earlier
  - PCI and 2 DES implantation on mid circumflex and obtuse marginal branch
  - Staged PCI (2 days later) with DES implantation on proximal LAD
- Currently on DAPT with Ticagrelor and Aspirin

**Clinical presentation**

- 1 hour presentation of oppressive chest pain at rest
- ECG: ST segment depression on lateral leads (aVL, I and V5-V6)

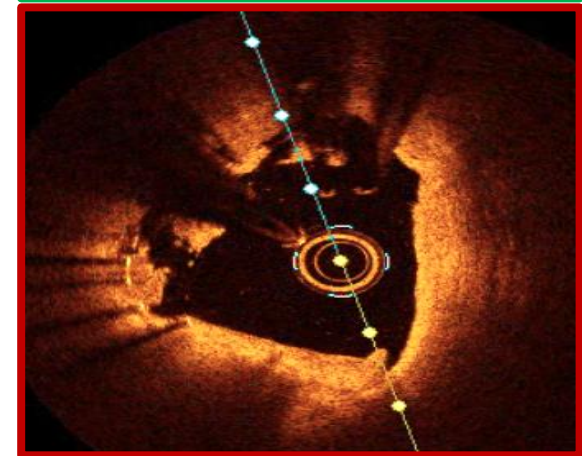
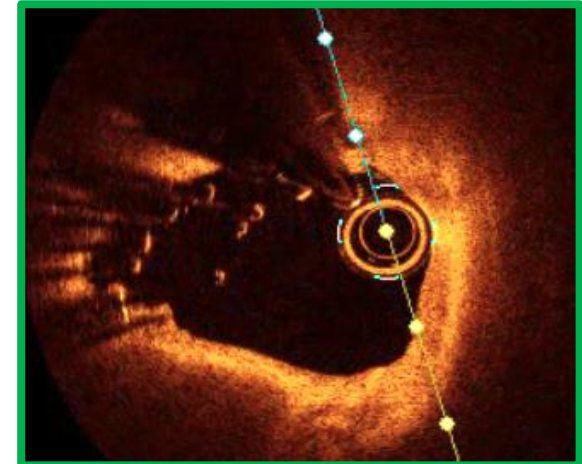
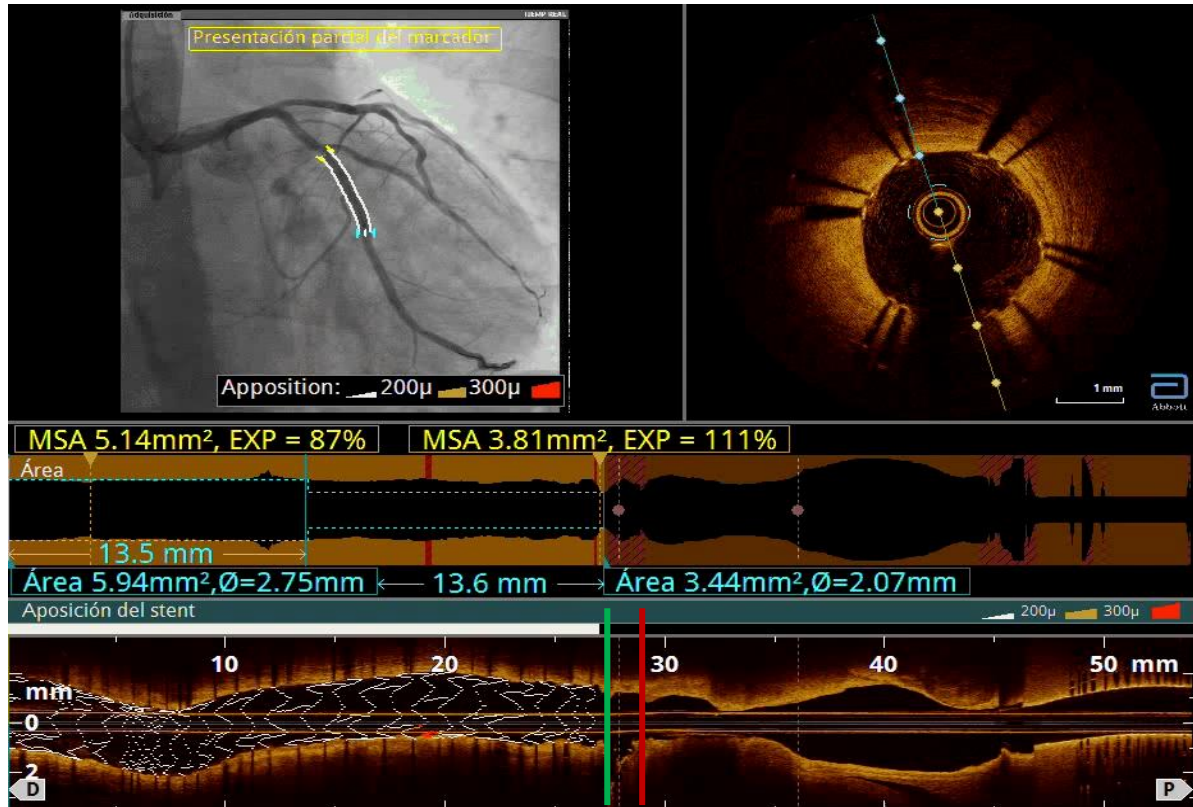


**Early subacute stent thrombosis on first obtuse marginal branch**



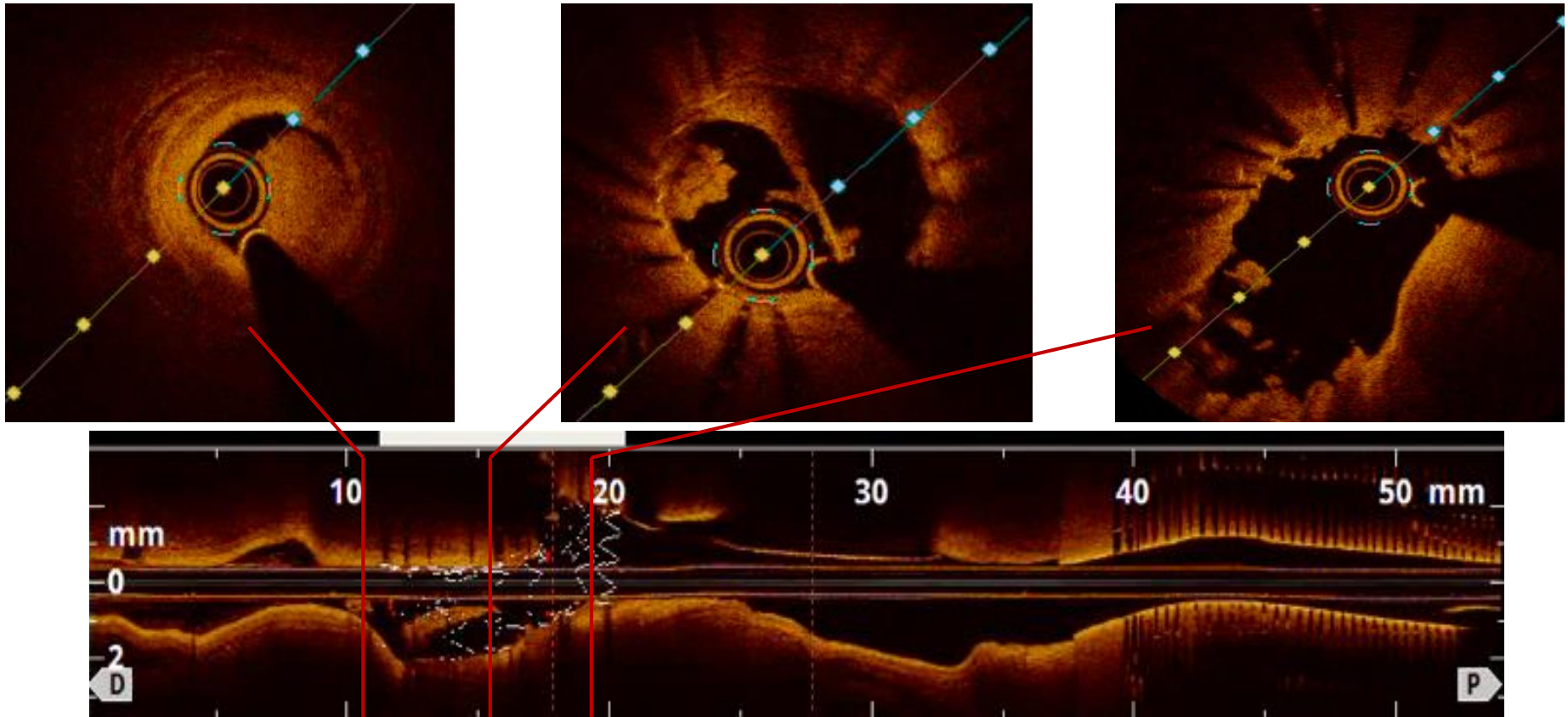
**TIMI II flow  
(Right coronary artery with no lesions)**

# OCT findings on left circumflex artery run



Crushed obtuse marginal stent struts with partial protrusion into the circumflex artery

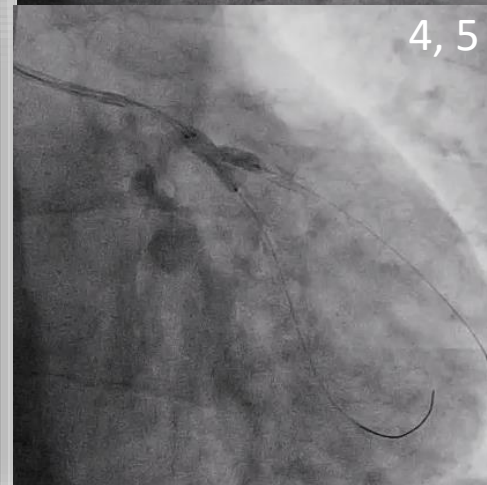
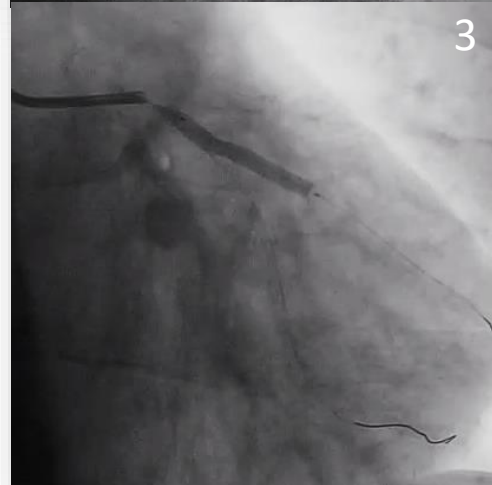
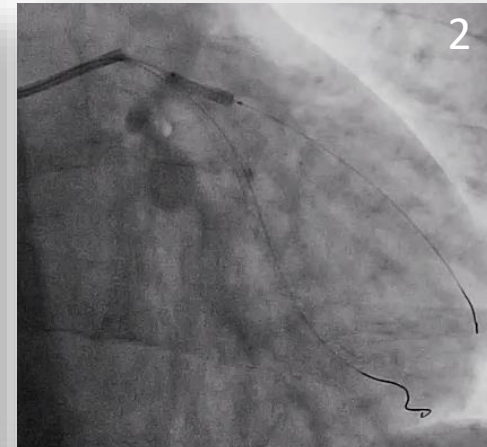
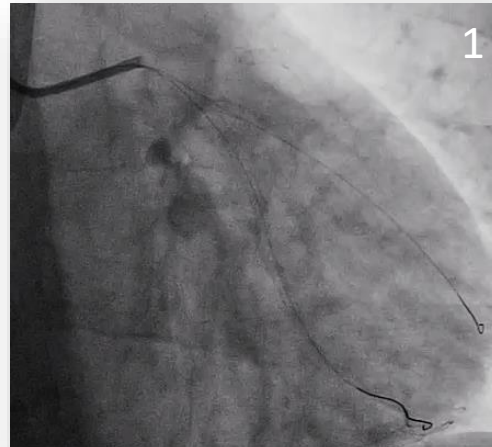
# OCT findings on obtuse marginal branch run

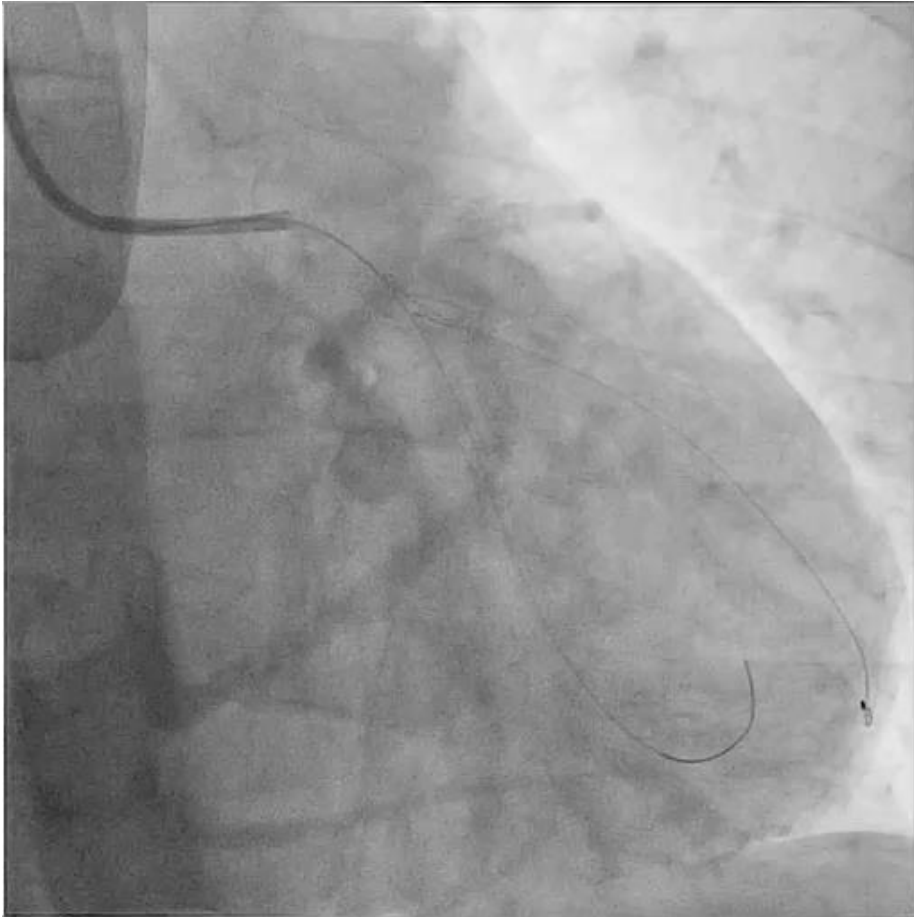


Stent thrombosis with sub-occlusion of the obtuse marginal branch



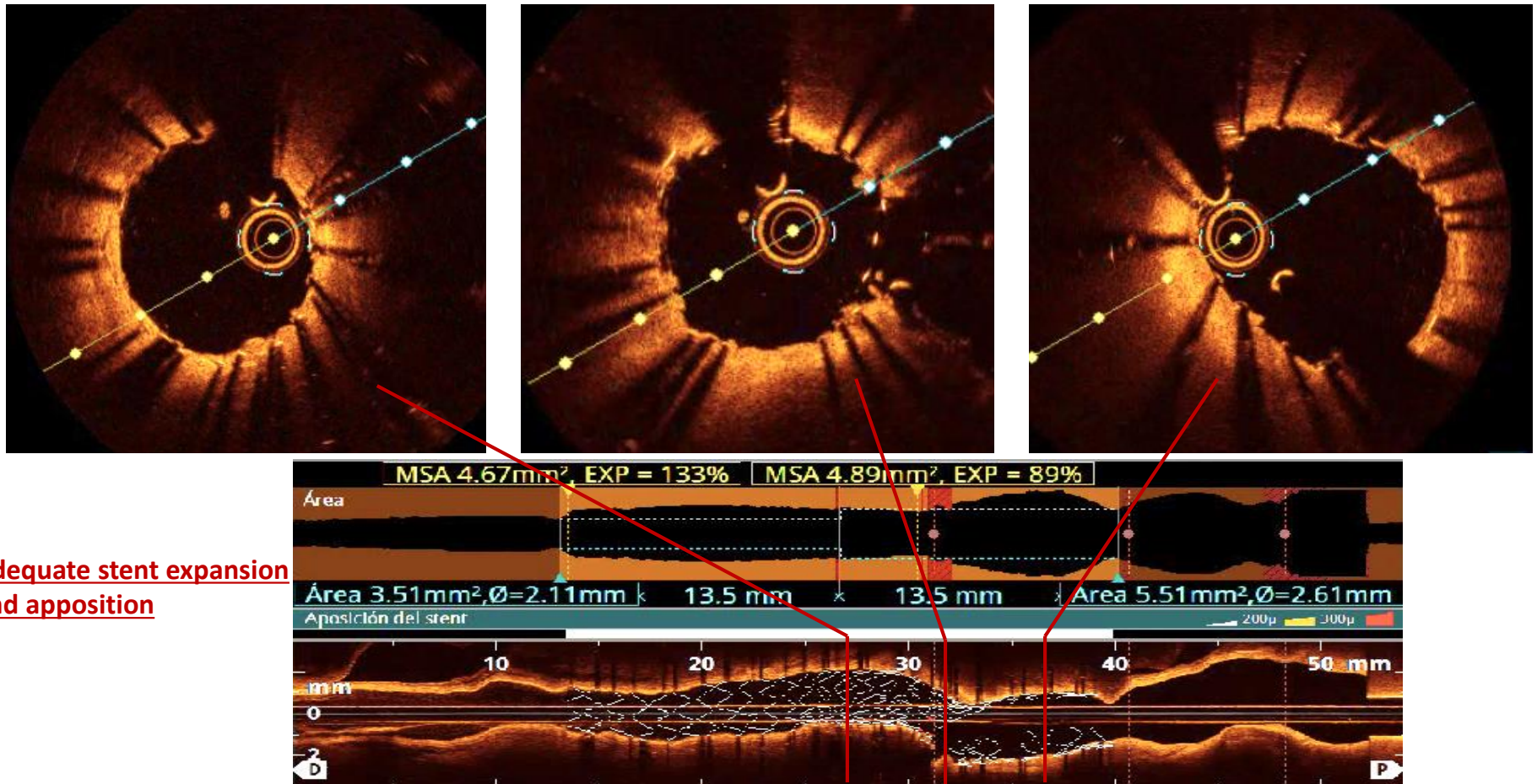
1. Wiring of both main branches (marginal and circumflex)
2. Obtuse marginal predilation with non-compliant balloon 3.0 X 15 mm
3. Stent implantation with inverted provisional stenting technique; circumflex -> obtuse marginal
  - DES 3.0 X 26 mm
4. Wire re-crossing to distal circumflex
5. Final-kissing balloon
  - Non-compliant 3.0 X 15 mm (marginal)
  - Non-compliant 3.0 X 15 mm (circumflex)





**TIMI III flow restoration**

# PCI OCT result, obtuse marginal run

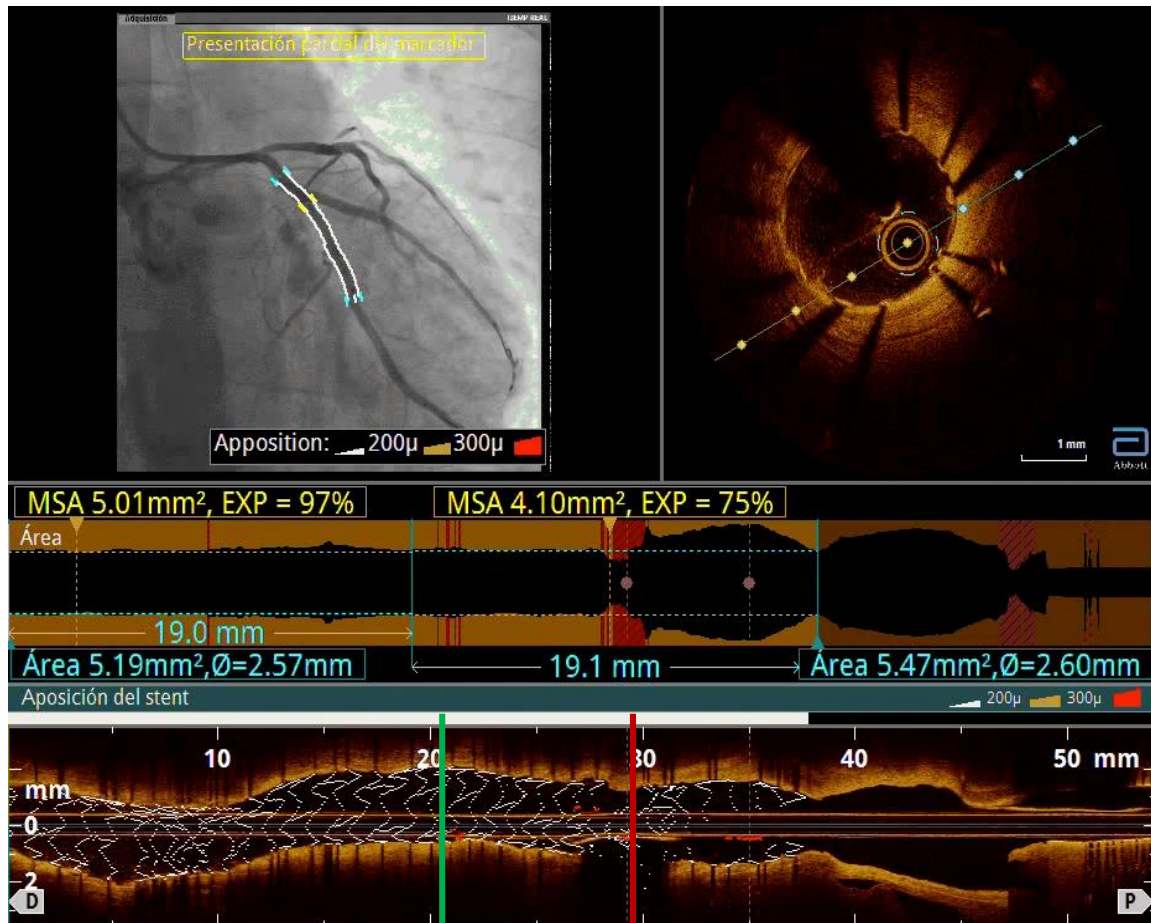


Adequate stent expansion and apposition



# PCI OCT result, circumflex artery run

## Co-registration



- Good stent apposition

- Mild residual thrombus

- *Stent thrombosis represents one of the most serious complication following coronary PCI, where management can be challenging.*
- *The most common mechanisms related to this entity constitute stent underexpansion and malposition, followed by coronary dissection.*
- *Intravascular imaging should be routinely performed in this situations for properly identification of causes and characterization of thrombosis mechanisms.*
- *OCT contributes to the evaluation of results, optimization and adequate management during PCI*