

OCT Detectable Stent Malapposition and Plaque Erosion

The story and strategy which IVUS
can not tell us.

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COI Disclosure

Name of First Author :
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I have no financial conflicts of interest to disclose concerning the presentation.

A case report - Basic Information

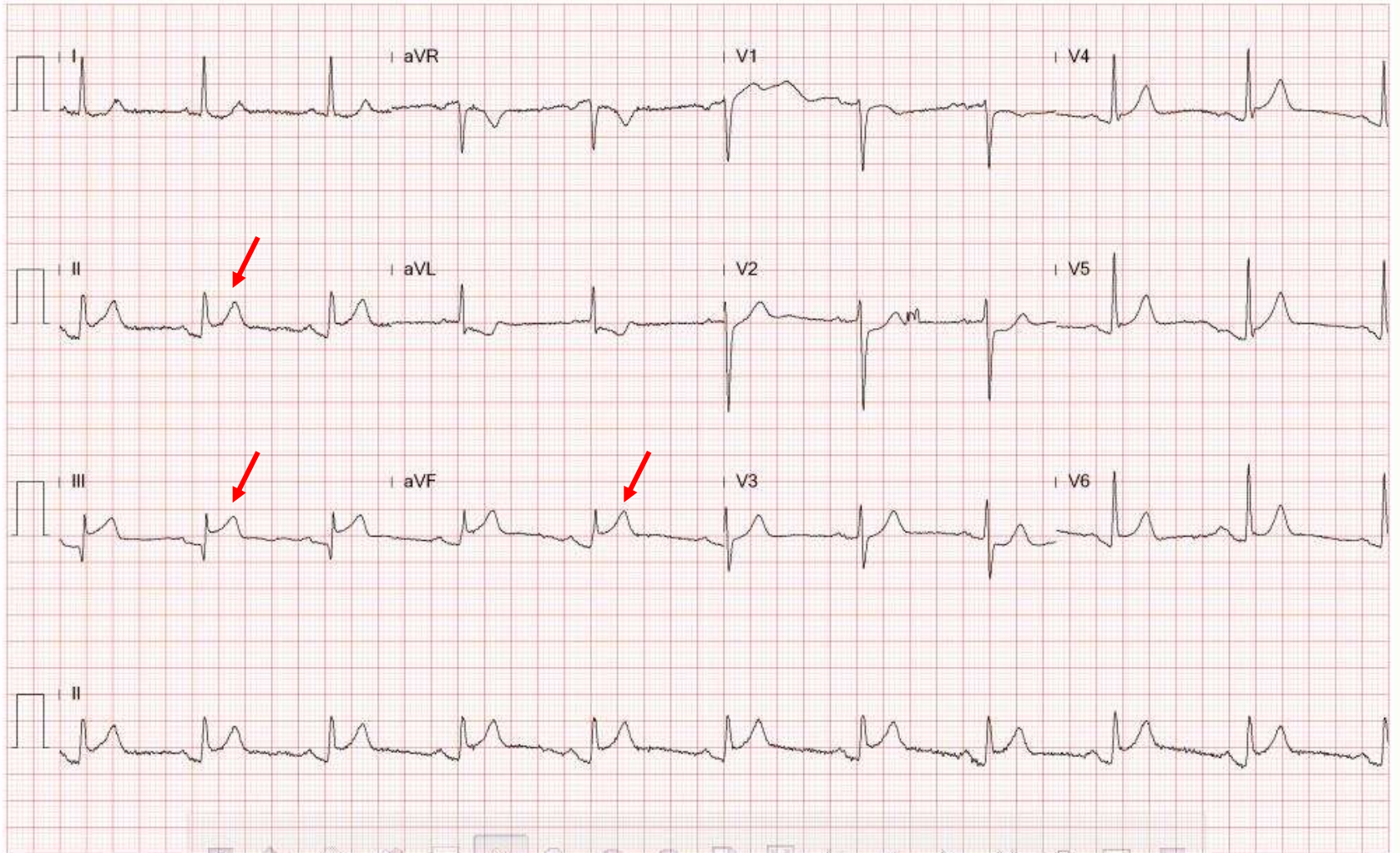
- **75 year-old male**
- **C.C:** severe chest pain for one hour
- **Medical Hx:** HTN, hemorrhagic stroke

ECG → STE in leads II, III, aVF

Imp: Inferior wall STEMI

Plan: Primary PCI

Sex: M
Name: 陳文強
Comment:
PR int: 190 ms
QRS dur: 84 ms
QT/QTc: 372 / 378 ms
P-R-T axes: 52 44 81



Primary PCI



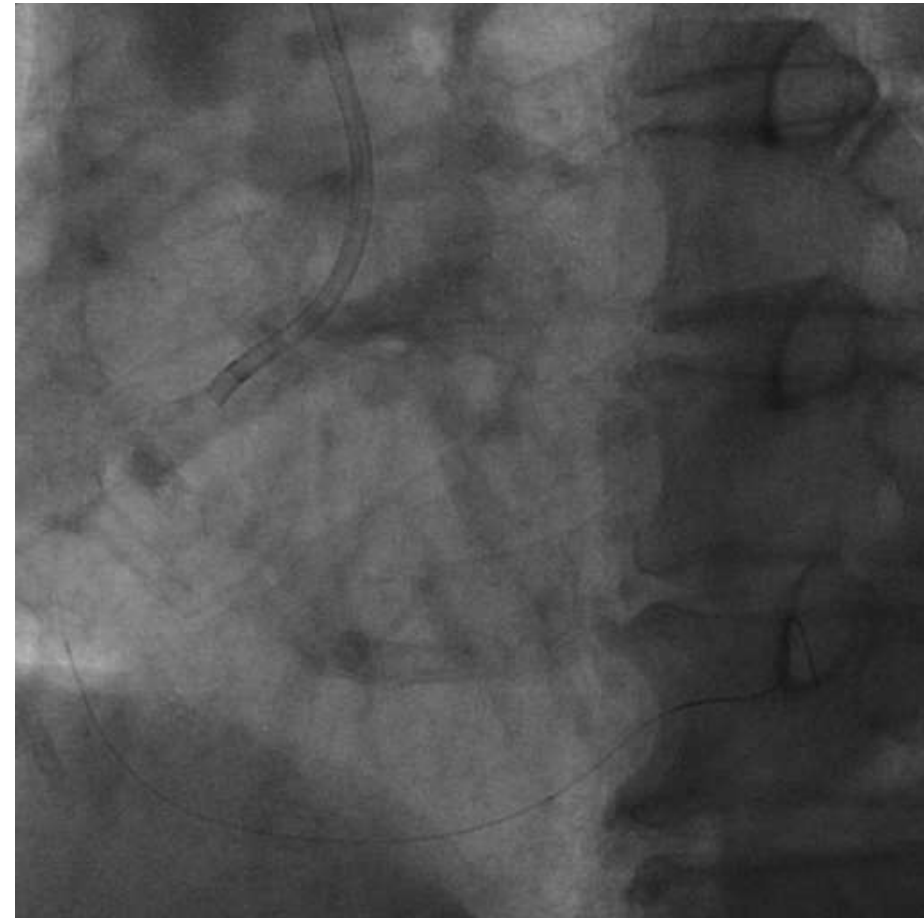
Angiography showed total occlusion of RCA.

Primary PCI

After multiple attempts of thrombus aspiration:

→ There was still thrombus sticky to the vessel wall with TIMI 2 flow.

Therefore I decided to place stent directly.



A DES of 3.5 mm was placed.



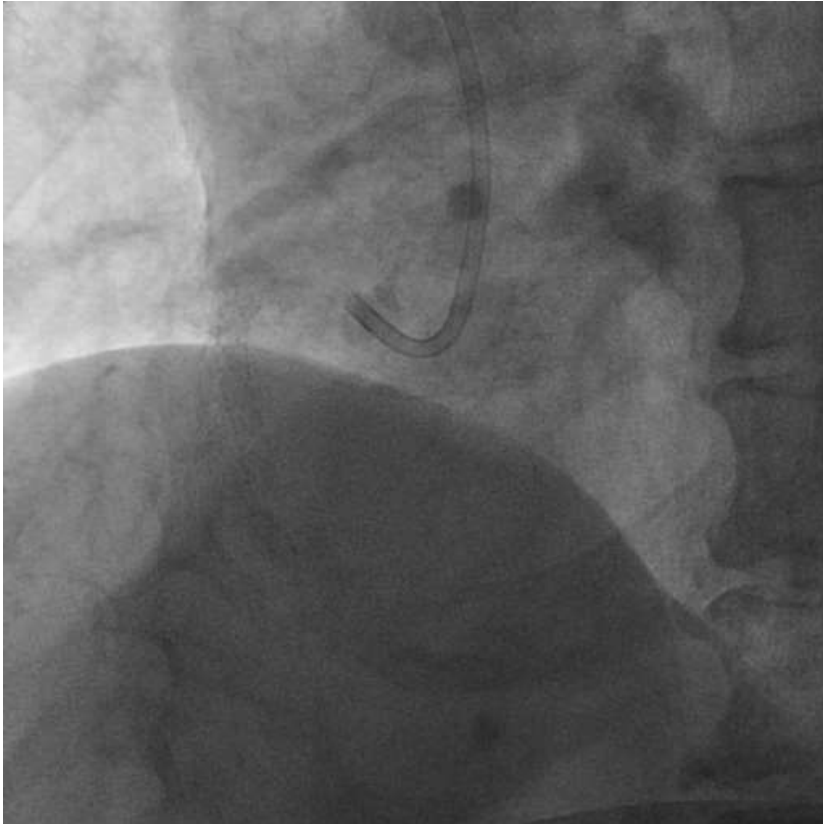
Post-dilate with NC balloon 3.5 x 20₇ mm

Final result was optimal



- After PCI, the patient's symptoms were relieved.
- Finally he was discharged at the 5th day after PCI with standard DAPT.
- I suggested followed angiography to him.

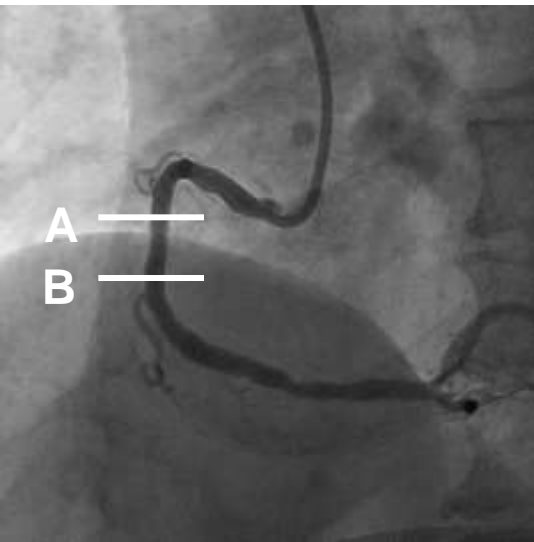
He received followed angiography after 20 days...



Followed angiography showed patent lumen with TIMI 3 flow.

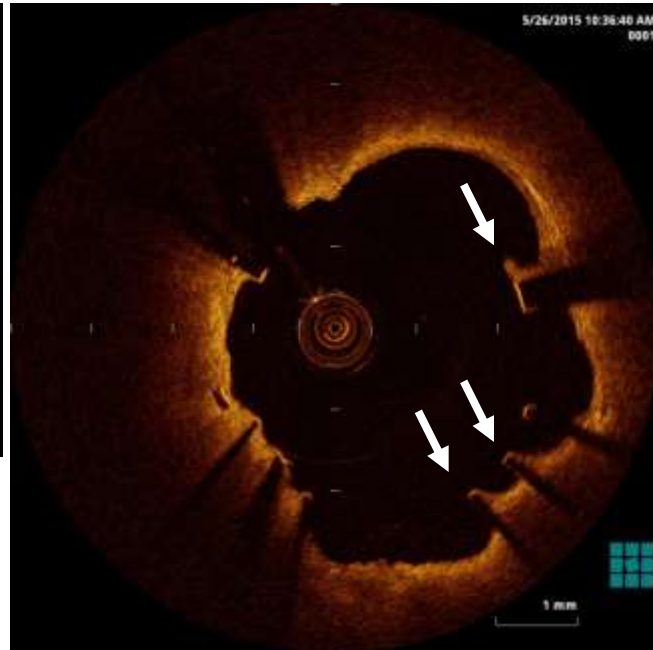
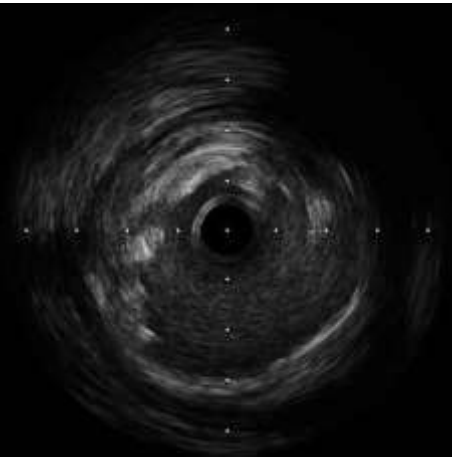
We also used OCT to evaluate his coronary artery.

We used OCT to evaluate after 20 days...

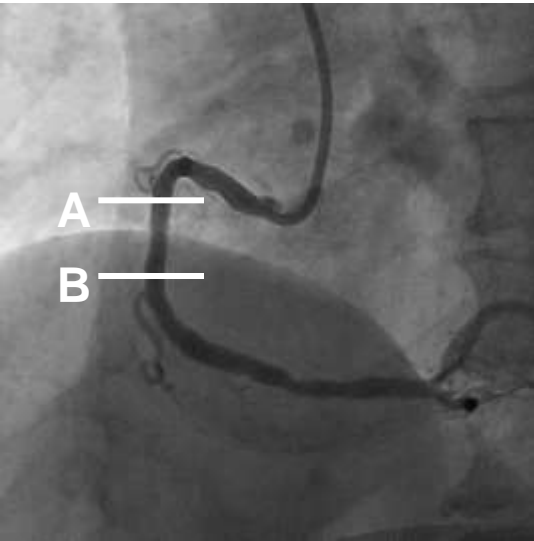


At the level A →

OCT showed malapposition of strut and plaque erosion with tiny thrombus which IVUS failed to detect.

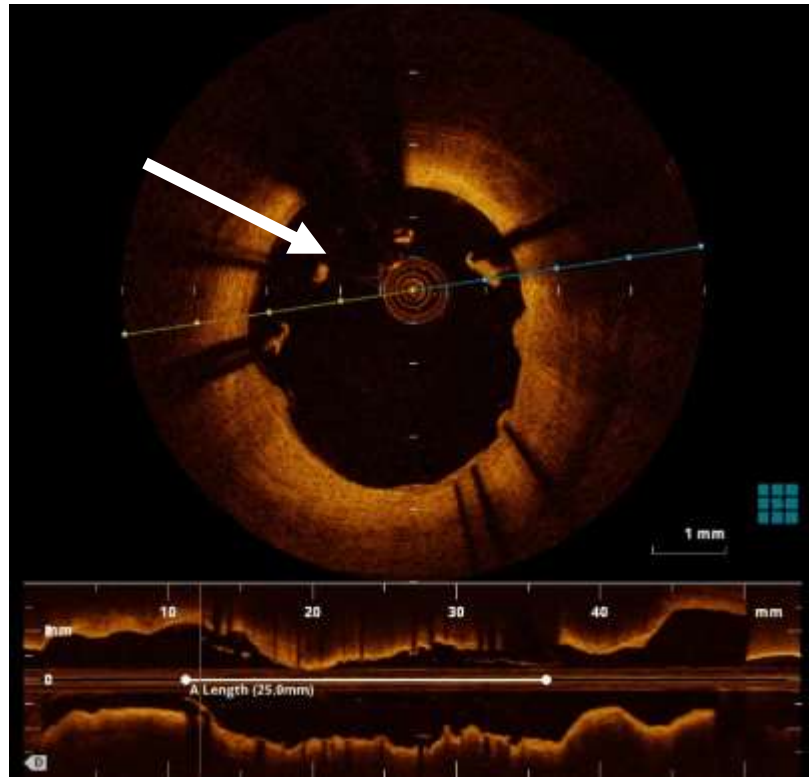
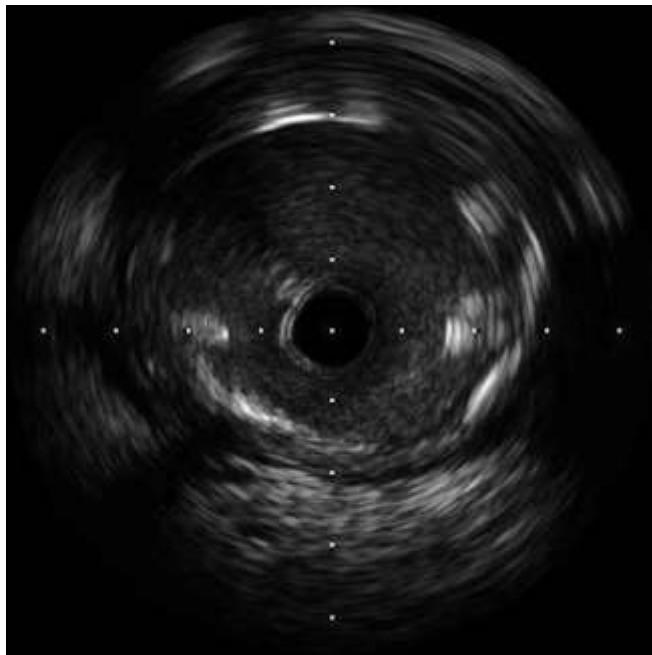


We used OCT to evaluate after 20 days...



At the level B →

OCT showed malapposition of strut which IVUS could not show clearly.



Treatment

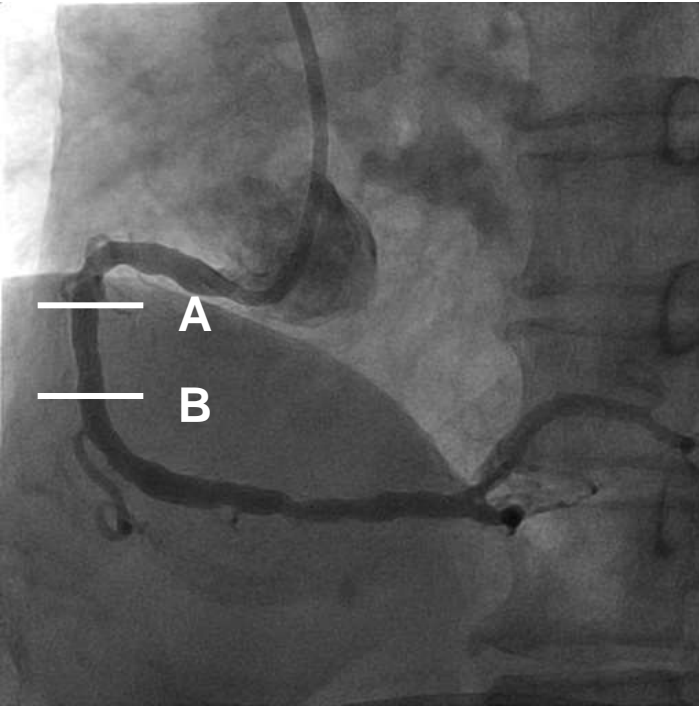


In-stent dilation by using NC balloon 4.0 x 15 mm

Final angiography showed optimal results.



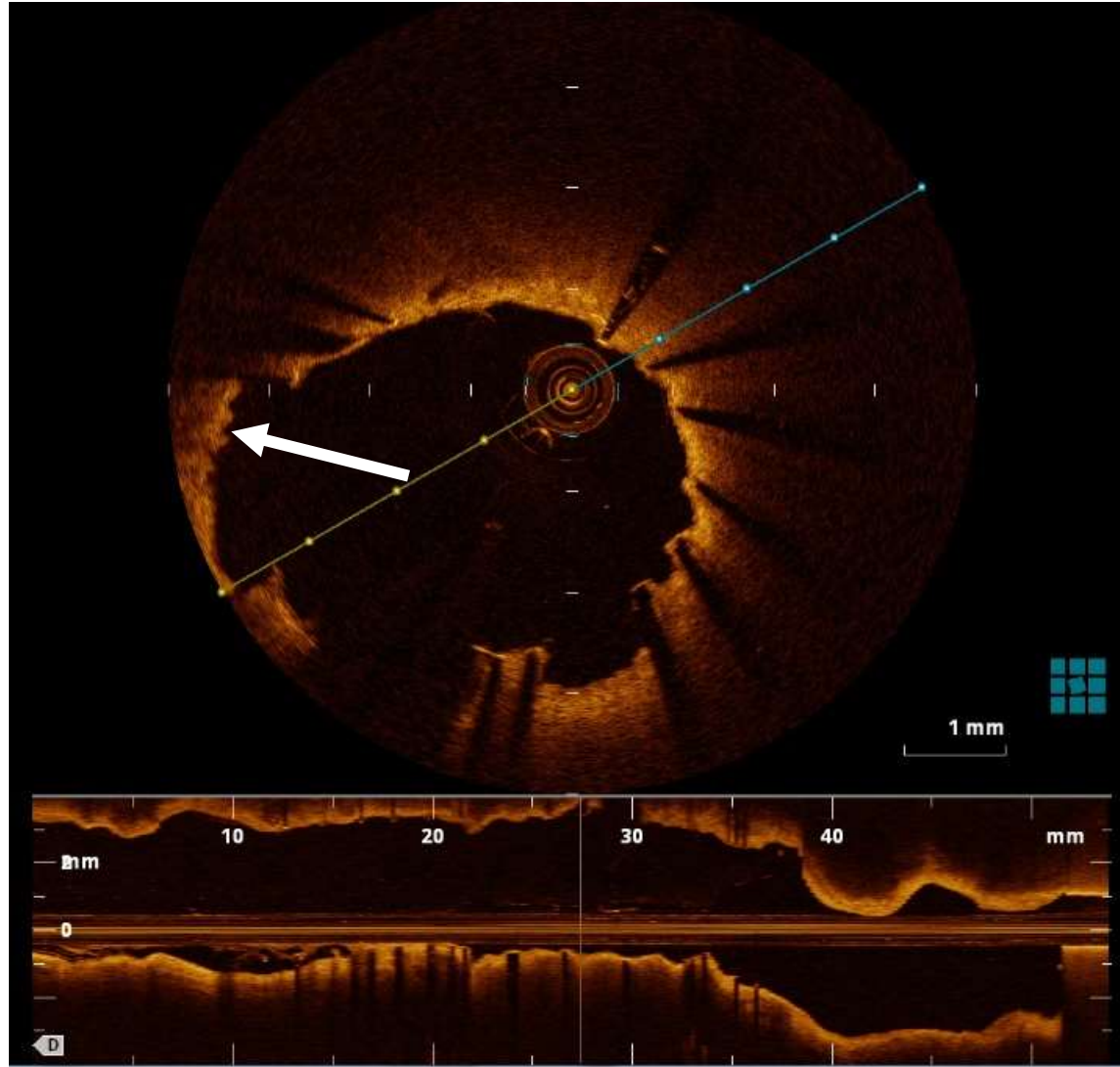
OCT for final result



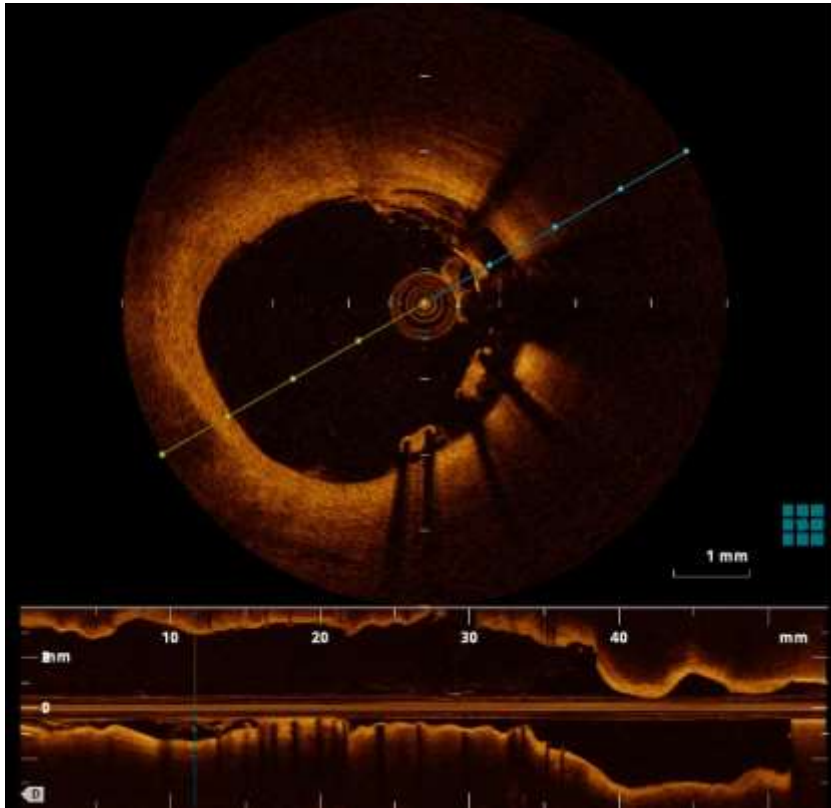
Level A →

Improved apposition of strut.

However, plaque erosion still existed.



OCT for final result



Level B→

**OCT showed improved
apposition of strut.**

Future plan for this patient

- Repeat angiography plus OCT are considered, at least one follow-up at **12 month** later, to evaluate the intimal healing and strut coverage, and for the issue of DAPT.
- **Prolong DAPT** is suggested if OCT images still show stent malapposition or poor strut coverage.
- **Statin** is recommended for plaque stabilization.

Conclusion

- **Stent malapposition** may occur in PCI for **AMI** because of inadequate sizing.
- Some possible reasons:
 - Increased secretion of catecholamine of AMI patients.
 - Stent placement is superimposed on residual thrombus.
 - Late positive remodeling of vessel wall.

Conclusion

- Followed angiography plus intracoronary image study might be **necessary** after PCI for AMI even initial results are optimal.
- **OCT** is superior to IVUS to detect the etiology of AMI and the stent apposition that are potential risk factors for future adverse events.

OCT may be a good tool to discuss about the issue of DAPT duration beyond 12M after DES placement.