

Coronary Aneurysm and Stent Malapposition after Sirolimus Eluting Stent Implantation in Chronic Phase

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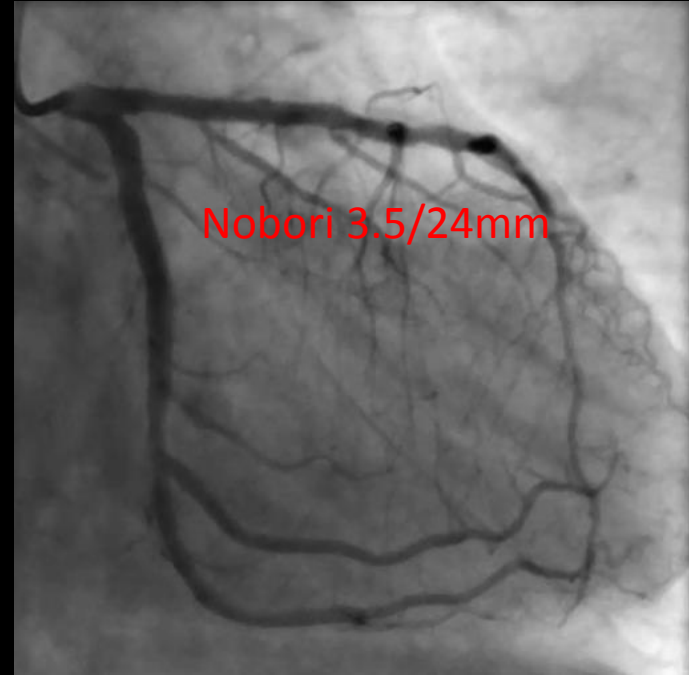
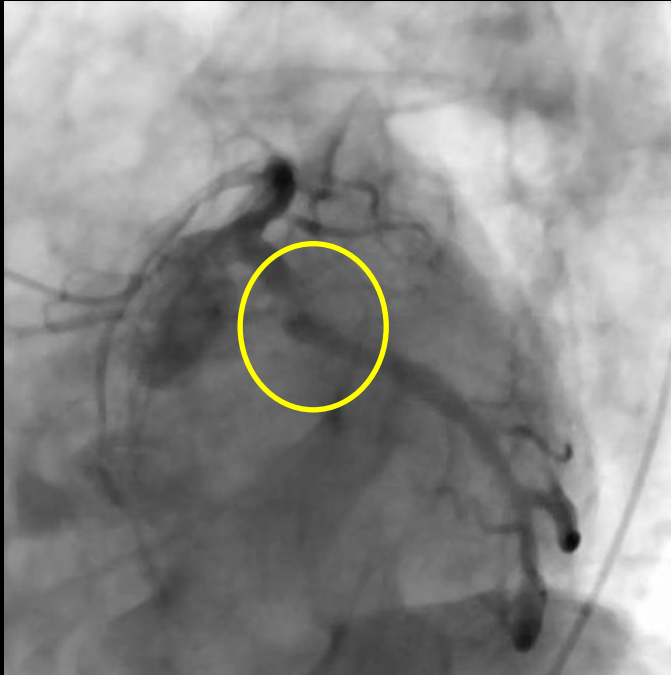
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The authors have no financial conflicts of interest to disclose concerning the presentation.

Case presentation

- 61-years-old Male
- He admitted to our hospital due to chest discomfort on May 2014.
- Past history: PCI for RCA in 2006
- Coronary risk factor: Hypertension and dyslipidemia
- Unstable angina was suspected, so we performed CAG.

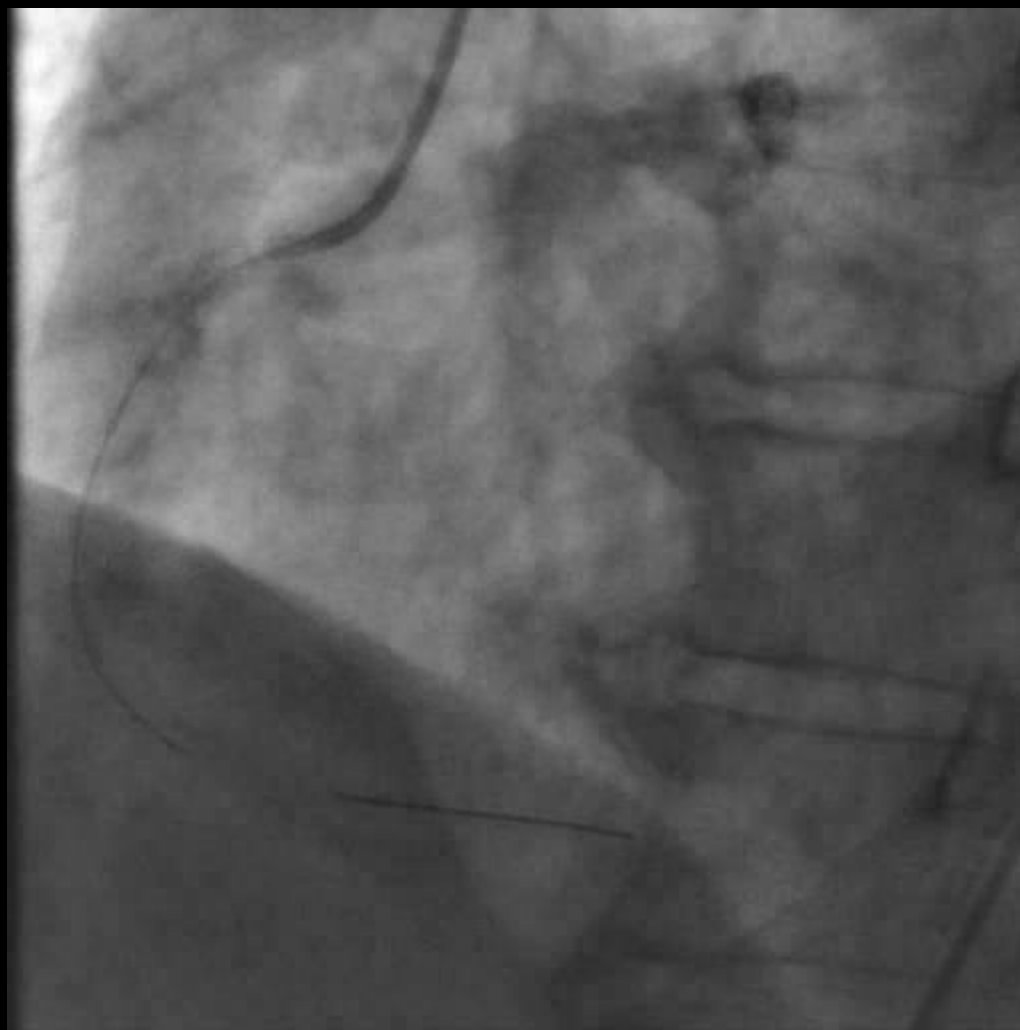
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There was 90% stenosis at proximal site of left circumflex artery (LCX).

We implanted BES at culprit lesion successfully. **But...**

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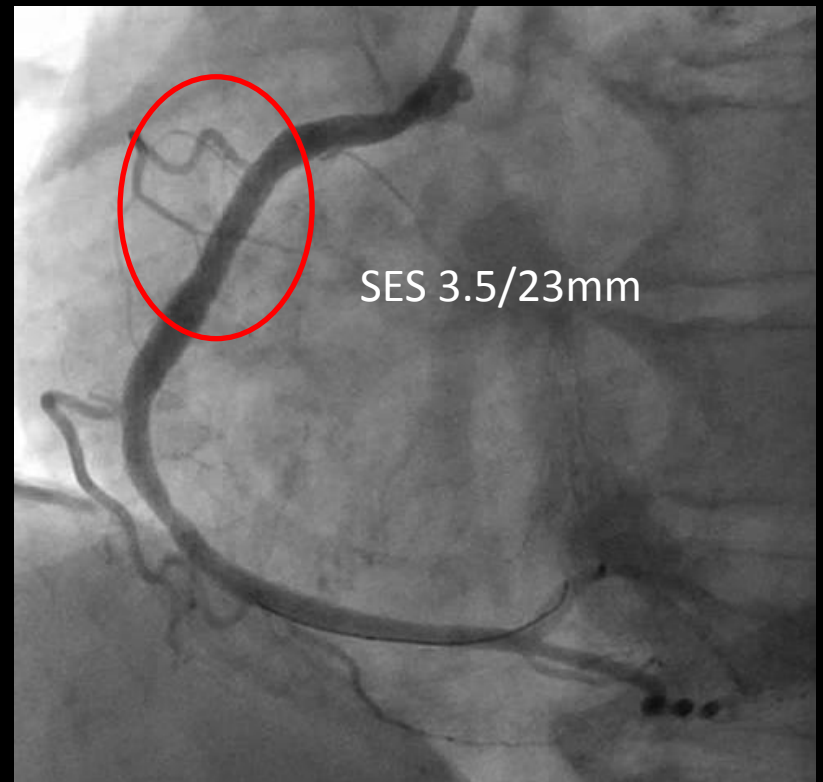
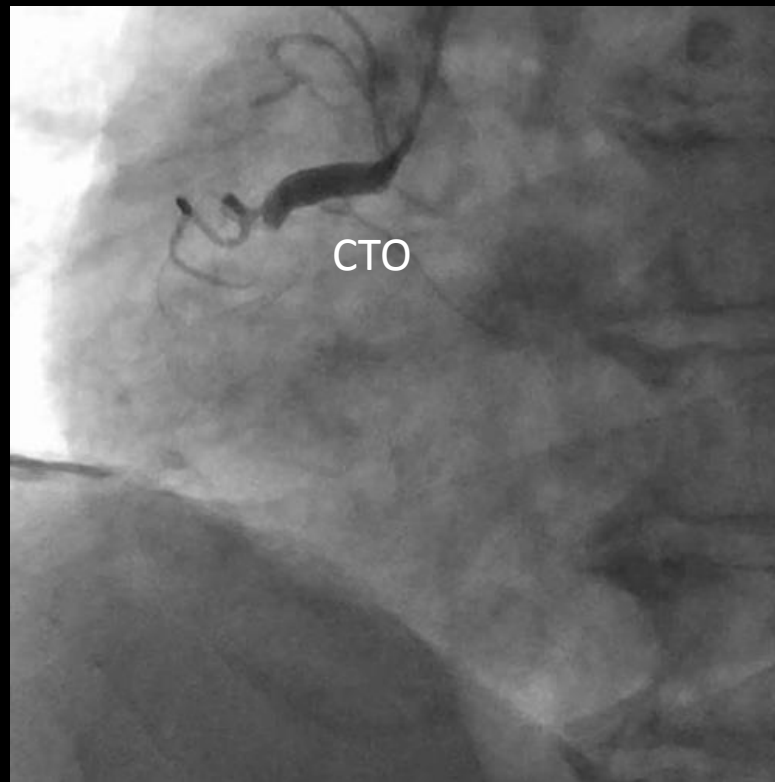


There was **coronary aneurysm at RCA**. We performed FD-OCT after CAG.

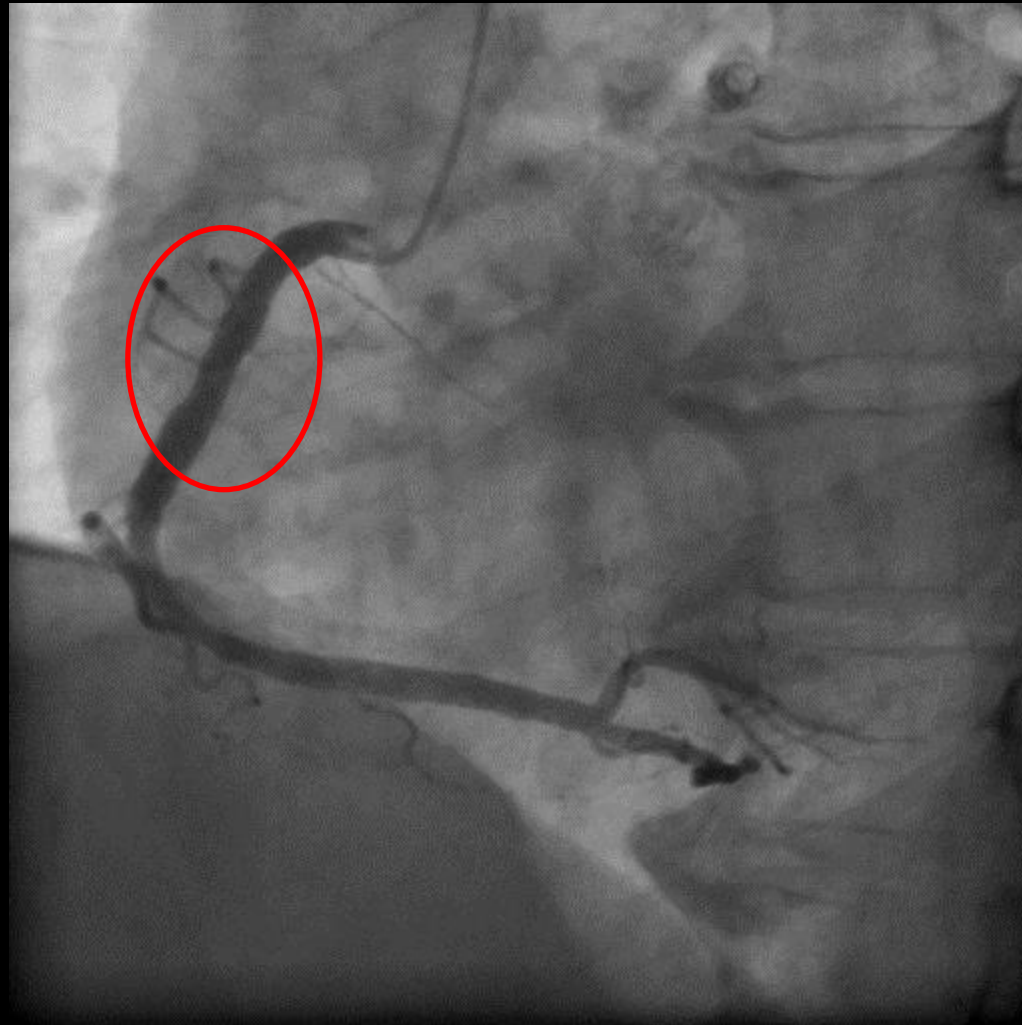
This patient was performed CAG for RCA three times.

- ① 2006/9/14
- ② 2008/3/4
- ③ 2014/5/8

2006/9/14



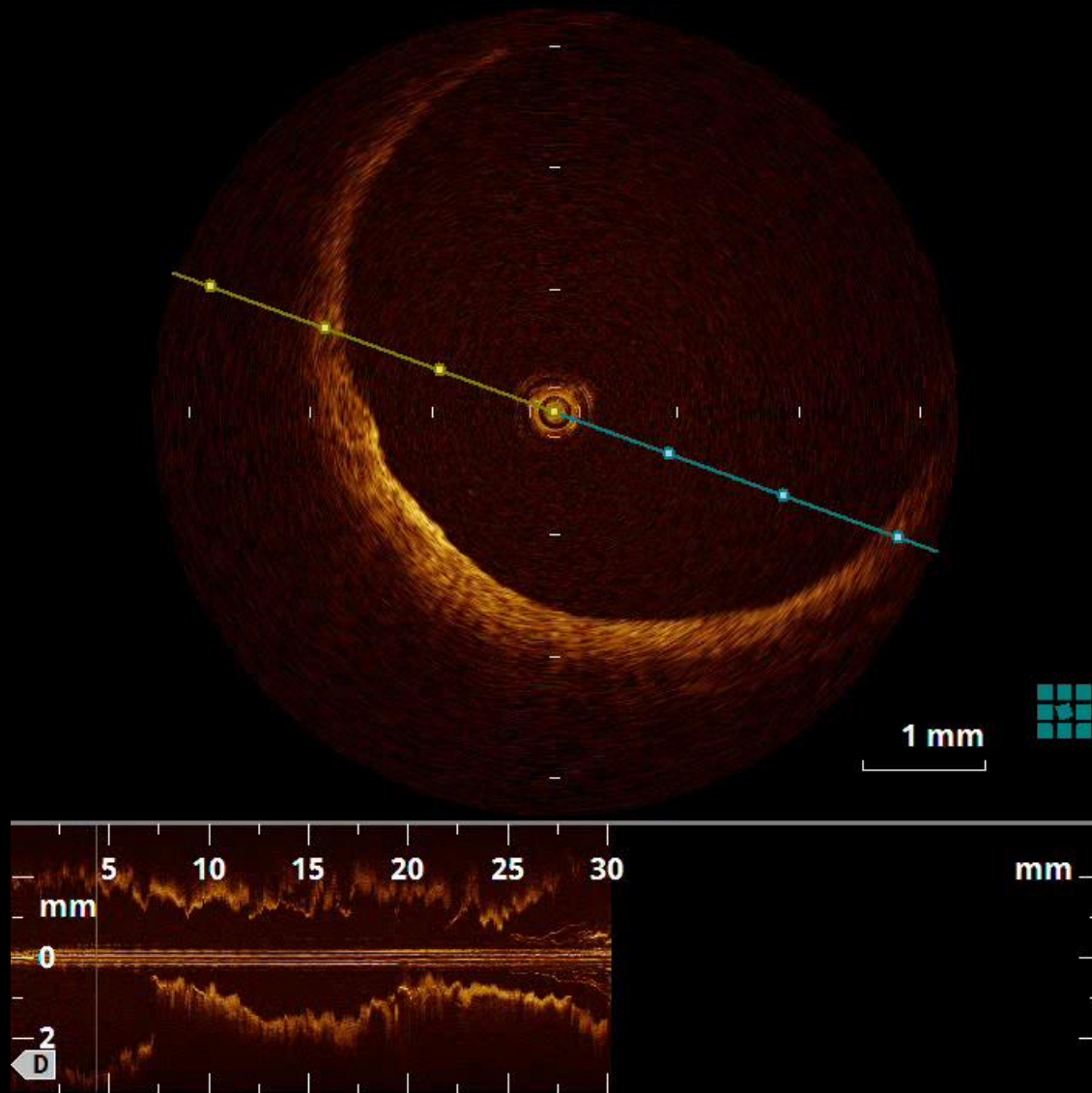
2008/3/4 (About 1.5 years after PCI)



There was **no stenosis** at PCI site. TD-OCT was also performed.

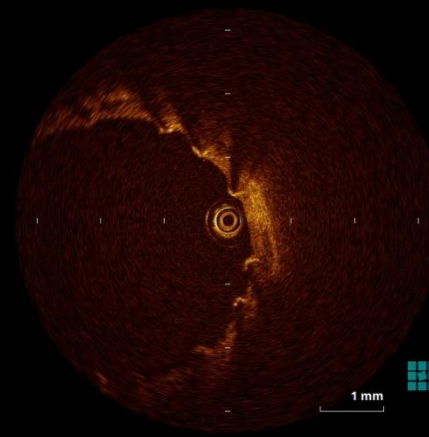
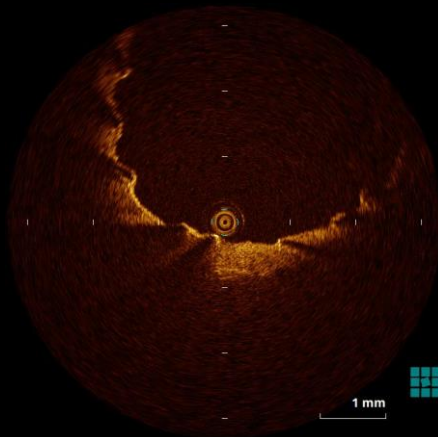
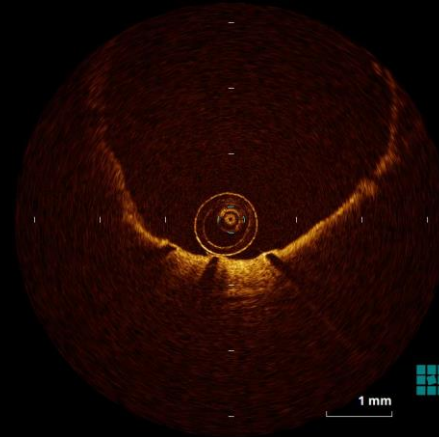
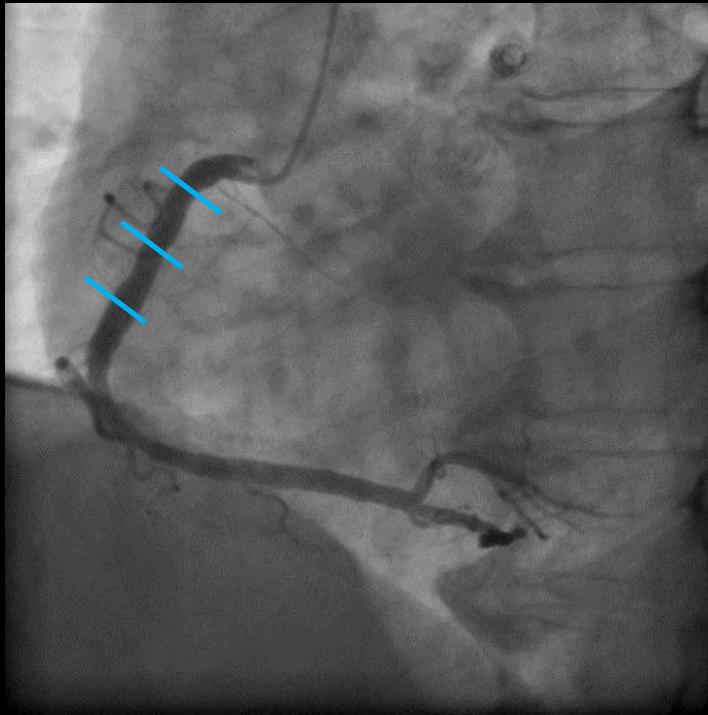
2008/3/4

TD-OCT

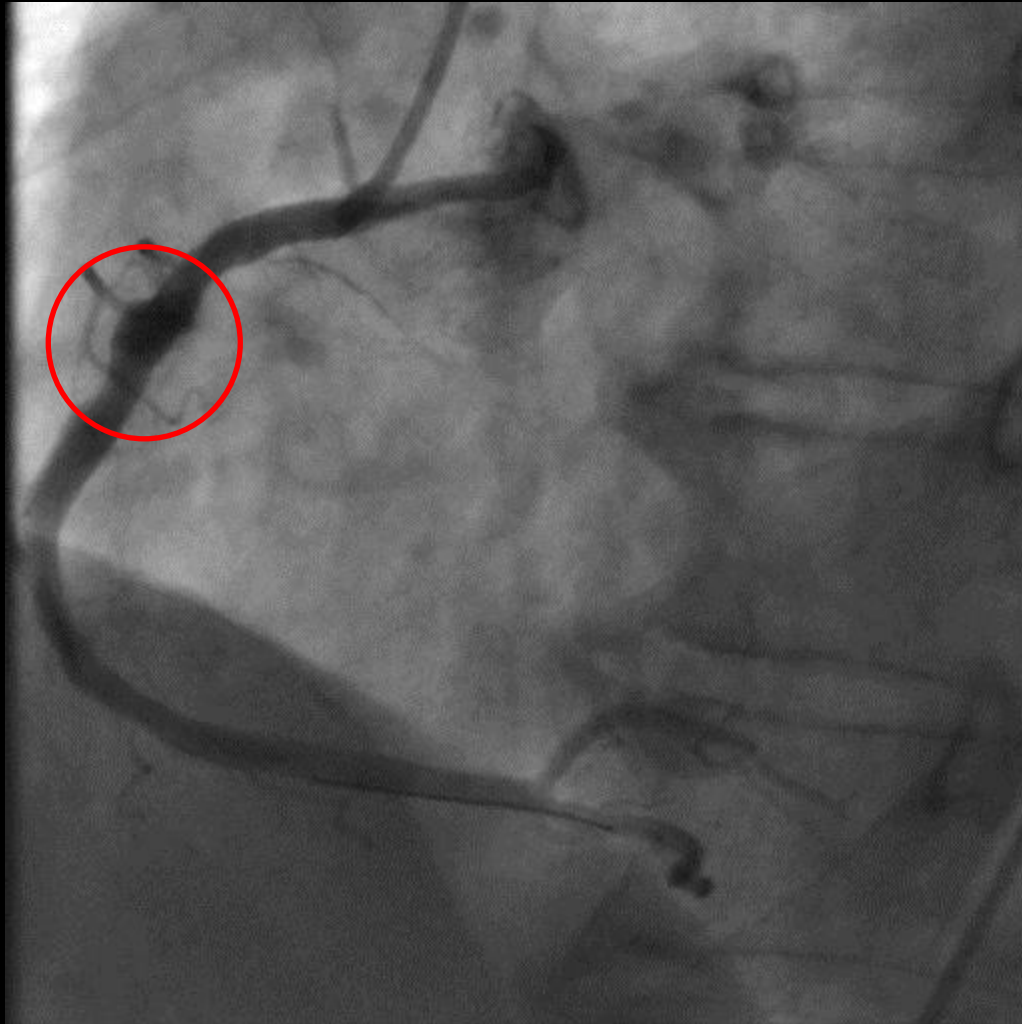


2008/3/4

Still images of TD-OCT

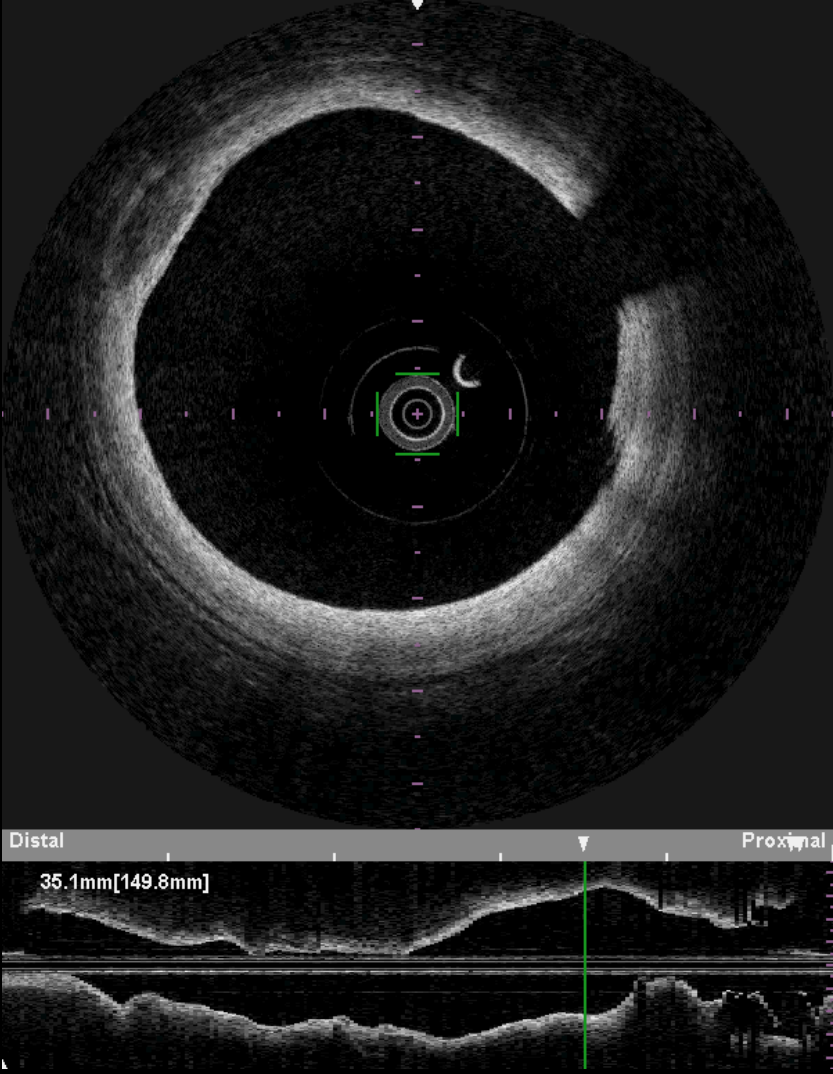


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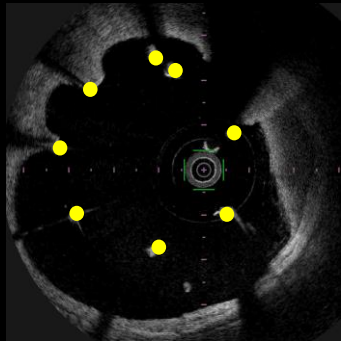
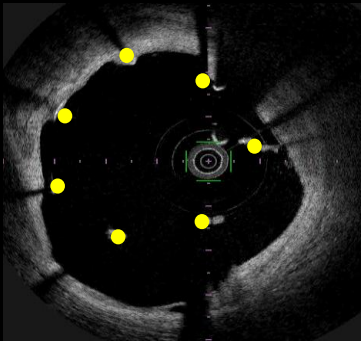
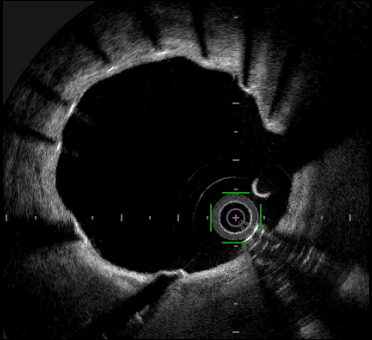
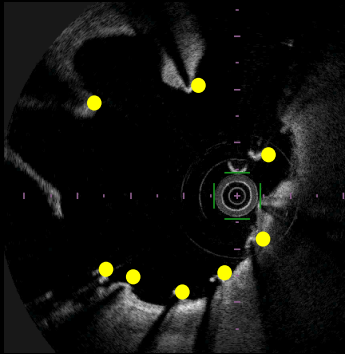
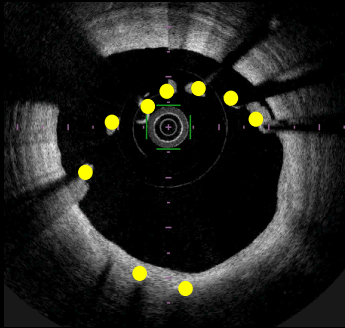
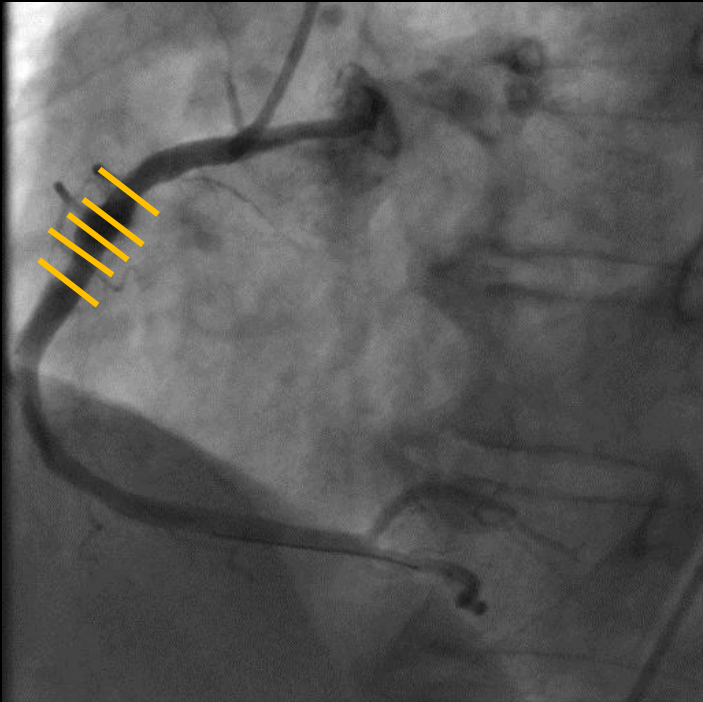
2014/5/8

FD-OCT (OFDI)



2014/5/8

OFDI still images



Discussion

- We experienced a case of very late stent malapposition, this might have occurred sometime from 1.5 to 8 years after stent implantation.
- Slota et al reported that coronary aneurysm occurred in **0.3% to 6.0%**.
(Am J Cardiol 1997; 79: 1104- 1106)
- And they also said that the patients with late stent malformation are more likely to have a risk of late stent thrombosis than patients without late stent malformation.
- Hassen et al reported that in DES implanted patients, this rare complication was about 4 times higher than it was in patients with BMS.
(Eur Heart J 2010; 31: 1172-1180)
- The mechanism is not fully understood, however **DES polymer** may cause delayed formation of endothelialization and chronic inflammatory changes in the media of coronary artery and hypertensive reactions.
(J Am Coll Cardiol 2009; 53: 2053-60)

- Ung Kim et al reported that the risk factors of coronary aneurysm after DES implantation are **a lesion over 33mm, a lesion in the LAD, a lesion in an infarcted related artery and chronic total occlusion.**

(Circ J 2011; 75: 861-867) This patient had CTO lesion.

- Optical coherence tomography (OCT) is an intravascular device, which has higher resolution and it can evaluate the stent struts and neointimal more accurately.
- To prevent very late stent thrombosis, this patient should have lifelong dual antiplatelet therapy.
- To discover this complication, long-term surveillance should be necessary.

Conclusion

- Coronary aneurysm and stent malapposition may be one of the causes of very late stent thrombosis, so discovering these phenomena are important.
- It occurs in chronic stage and that complication is often asymptomatic.
- So stent-follow up in chronic stage after DES deployment is necessary.