A case of subacute stent thrombosis after Everolimus Eluting stent implantation : consecutive observation of late-acquired malapposition by OFDI in short period of time

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Background

- Drug-eluting stents were introduced into clinical practice in order to reduce the rates of restenosis observed with bare metal stents for the treatment of coronary artery disease.

  (J.W.Moses et al. NEJM 2003 ;349(14)1315-)

- Although rare , stent thrombosis remains a severe complication after stent implantation owing to its high morbidity and mortality. (Iakovou I et al. JAMA 2005;293(17)2126-)

- There are some predictors of stent thrombosis.

  (Iakovou I et al. JAMA 2005;293(17)2126-)

- We experienced the stent thrombosis caused by large stent malapposition after implantation of Everolimus Eluting Stent(EES).

Case ： Male in his 70's

✧ Chief Complaint ： effort chest pain

✧ Present history of illness ：

He had attended our hospital due to hypertension and chronic atrial fibrillation.

He had presented effort chest pain for four months and got a myocardial perfusion scintigraphy .

It showed the ischemic change at the anterior and anteroseptal region.

He was admitted to our hospital on June 2015.

✧ Past illness ： Chronic atrial fibrillation, Hypertension

✧ Coronary risk factor ： Hypertension

✧ Medication ： aspirin 100mg/day, prasugrel 3.75mg/day
 rivaroxaban 10mg/day, olmesartan 20mg/day,
 bisoprolol fumarate 1.25mg/day, amlodipine 2.5mg/day,
 esomeprazole 20mg/day

# Physical Examination and Laboratory Data

- Vital Sign : Blood Pressure 106/70mmHg, Heart Rate 58bpm

- Heart sound : irregular rhythm, no murmur

- Other physical examinations : almost normal

- ECG : atrial fibrillation rhythm , HR 59bpm, Complete Right bundle block , significant ST change was nothing

- Chest X-ray : normal

- Trans thoracic echocardiogram : Left ventricular wall motion had no asynergy, LV EF54%, valve n.p.

- Blood test : HDL-C 58mg/dL, LDL-C 138mg/dL, TG 74mg/dL, A1c 5.4%, eGFR 61.3

- Myocardial perfusion scintigraphy: the ischemic change at the anterior and antero-septal region
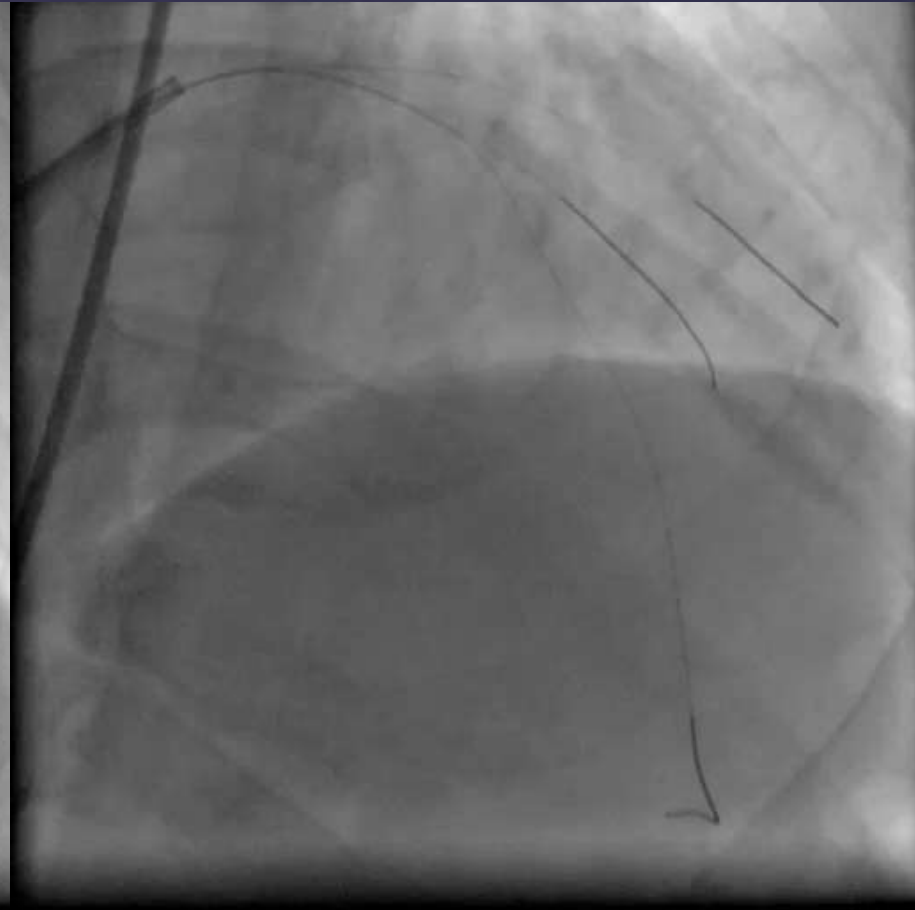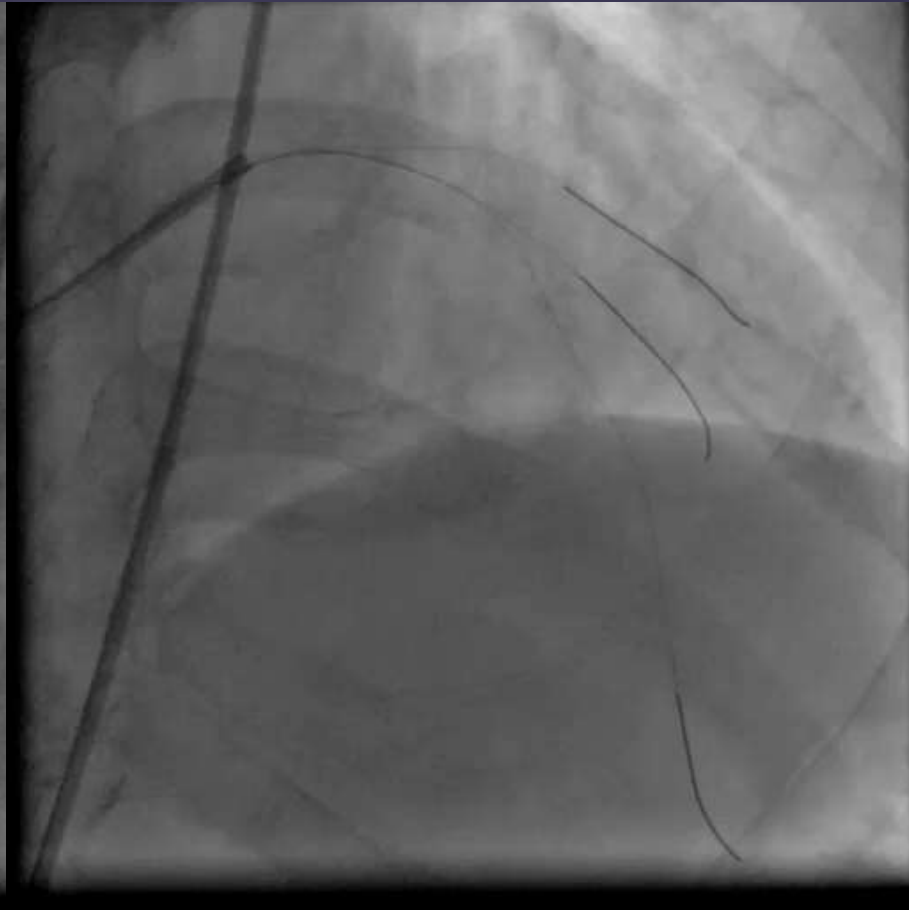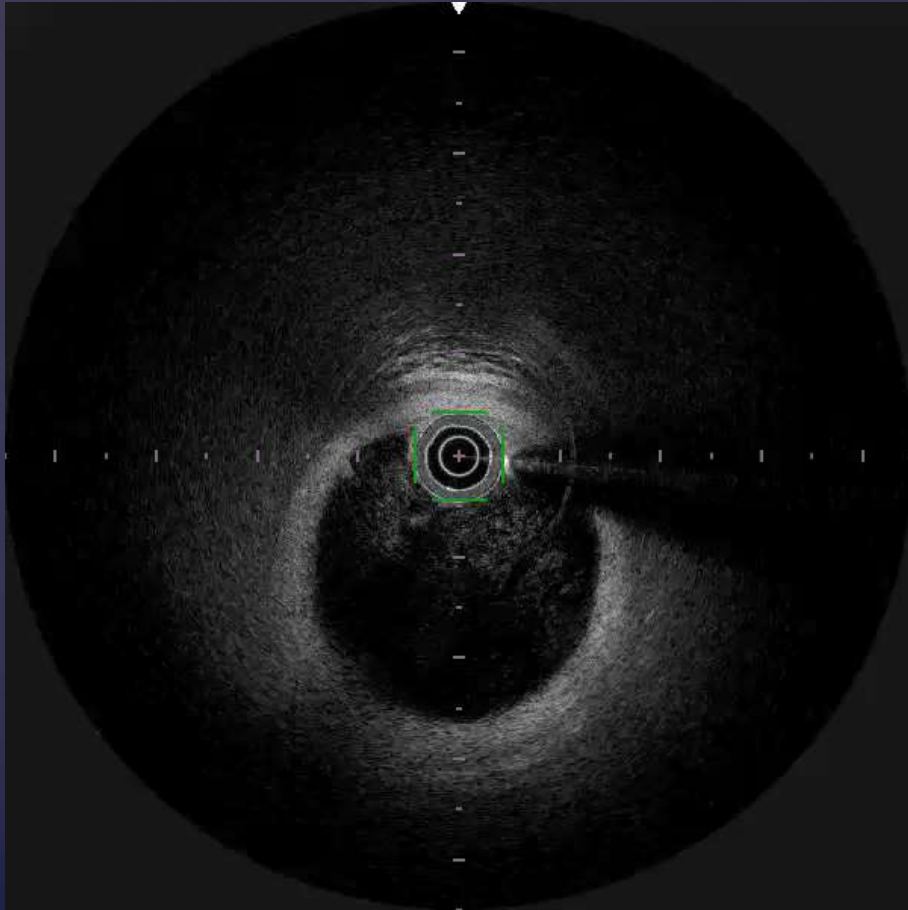
CAG (day 2)
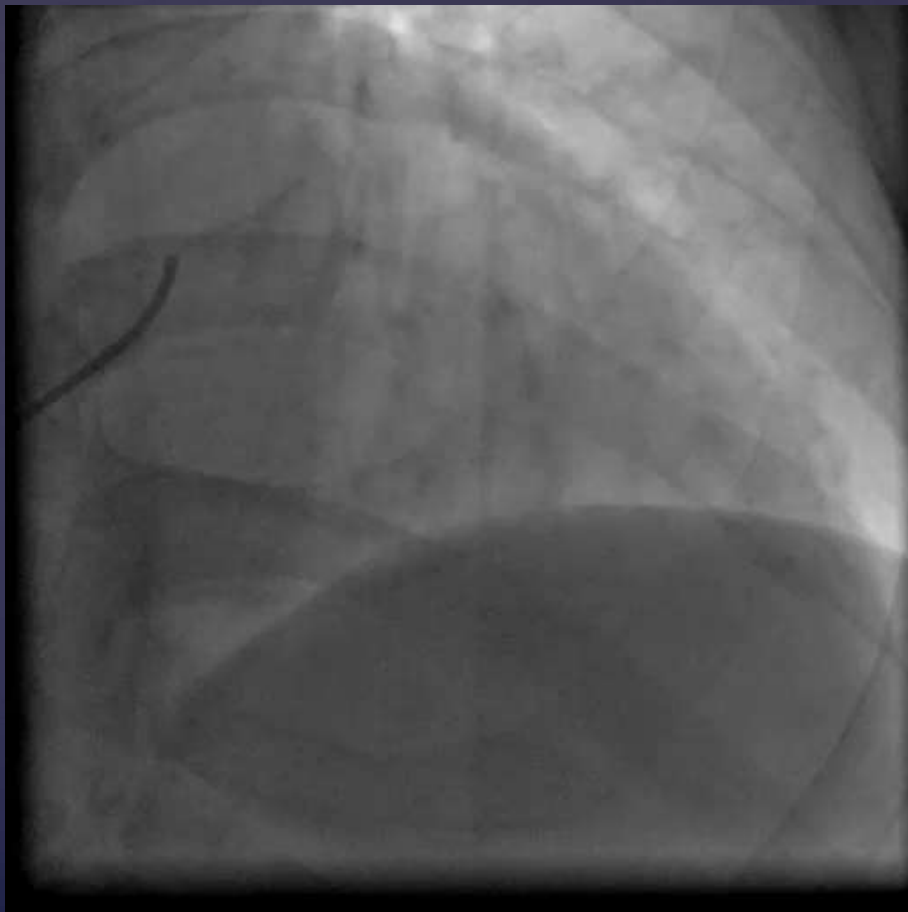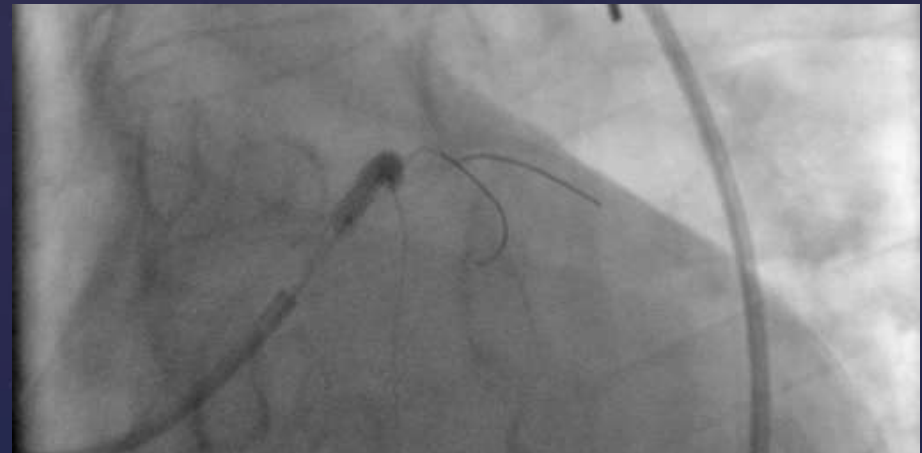

AP-Cranial
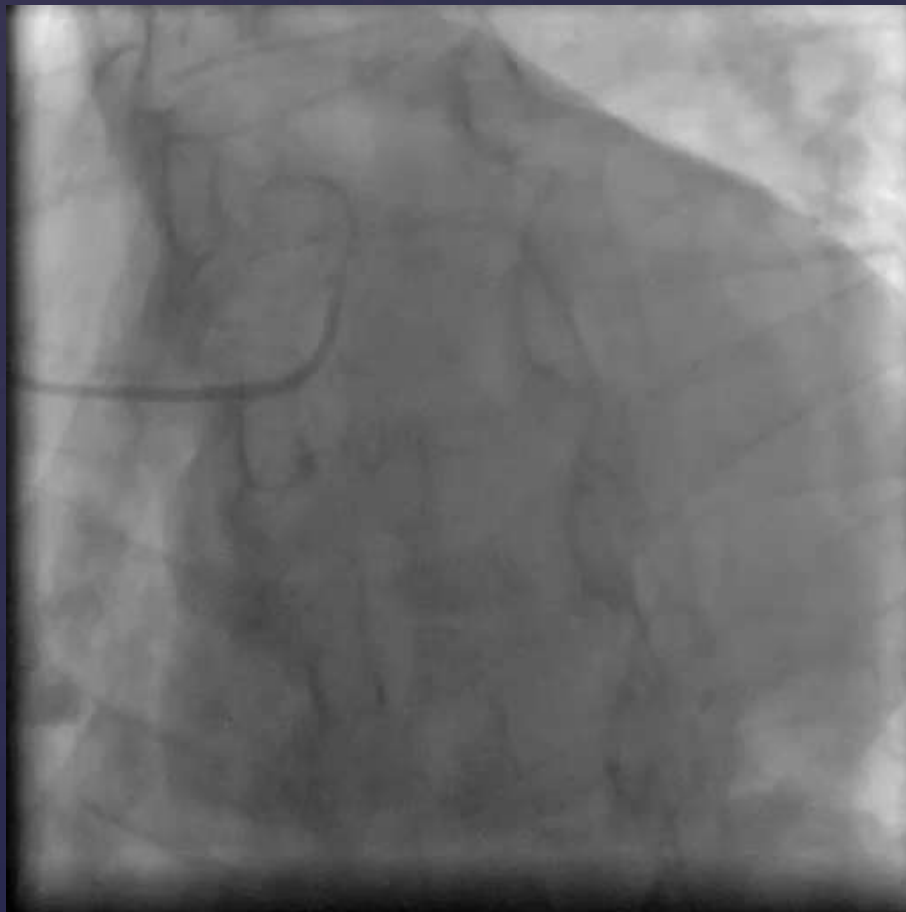
LAO-Caudal

PCI to LAD and first diagonal branch(day 5)

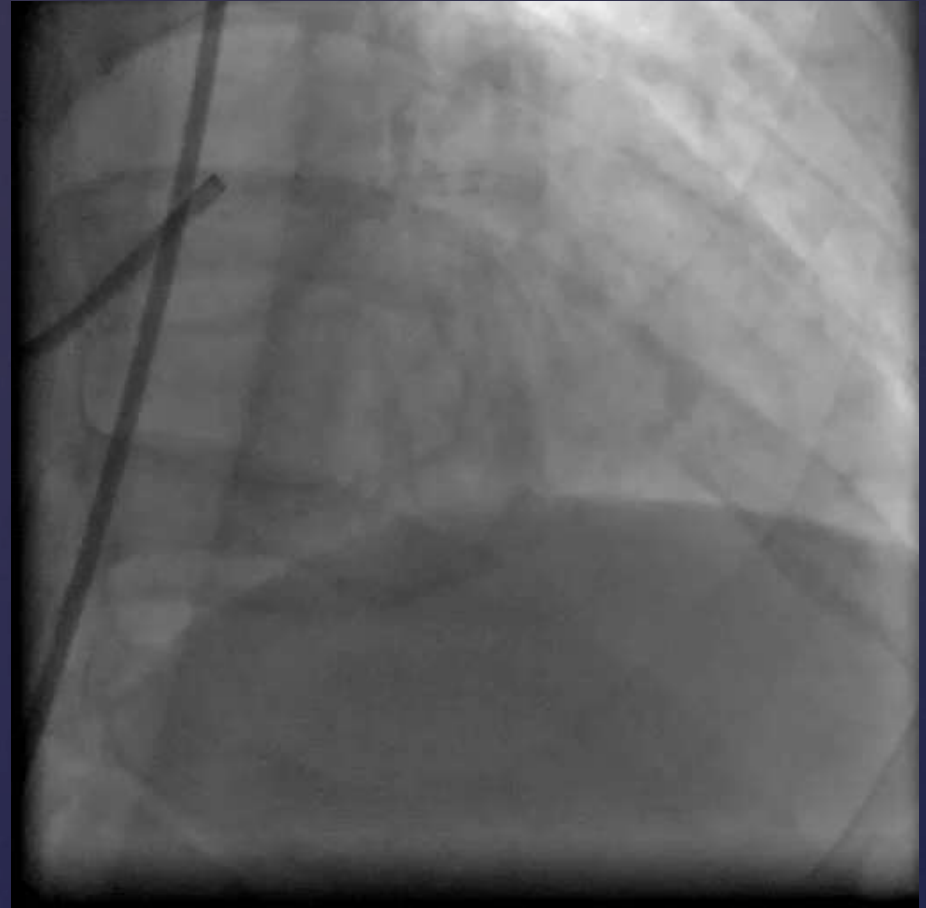# OFDI to LAD after pre-dilatation and Stenting to first diagonal branch and LAD
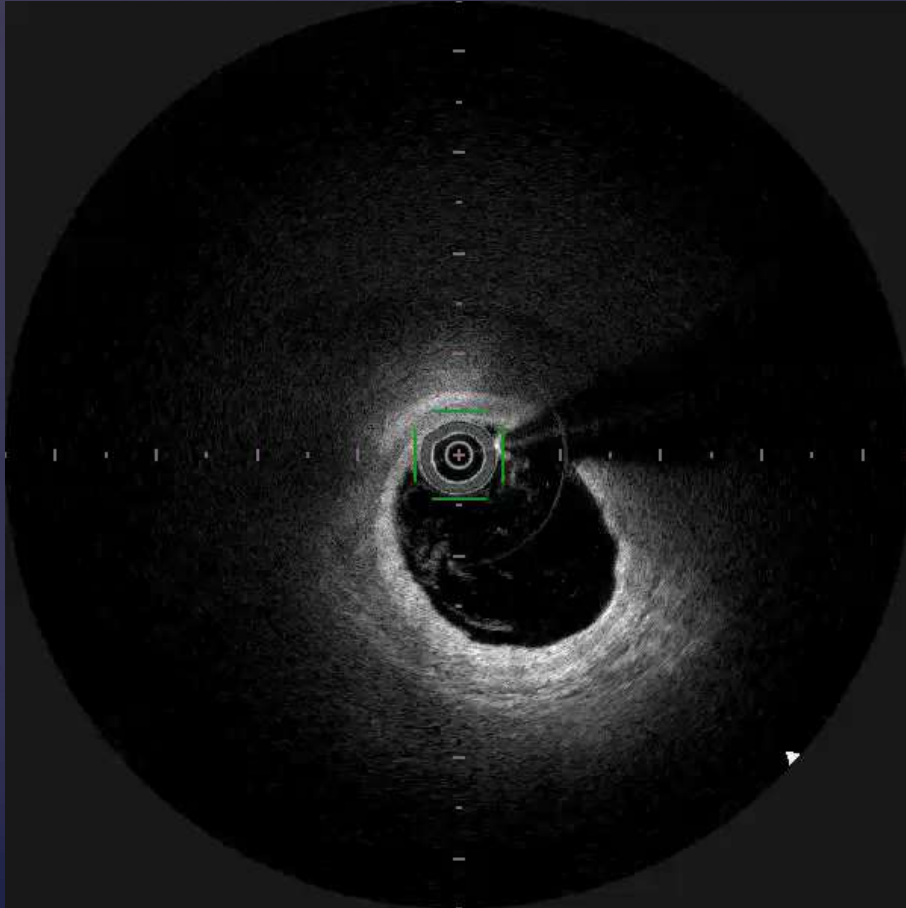

EES 2.5×20mm to diagonal branch

EES 3.0×30mm to LAD

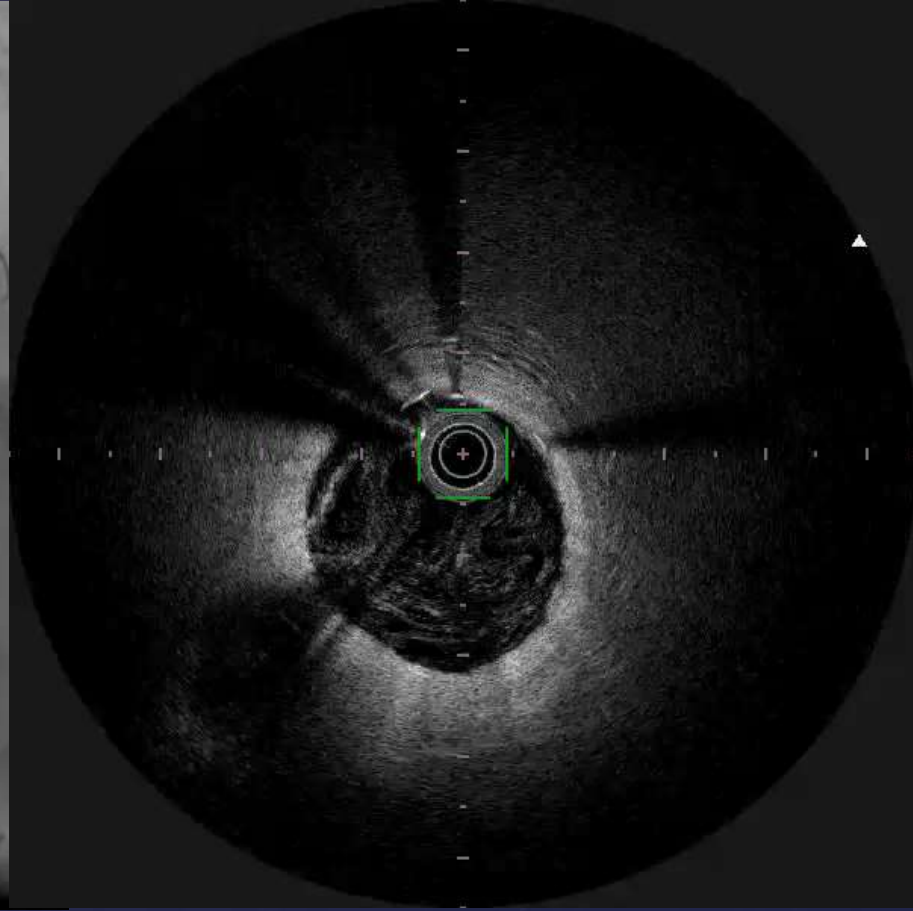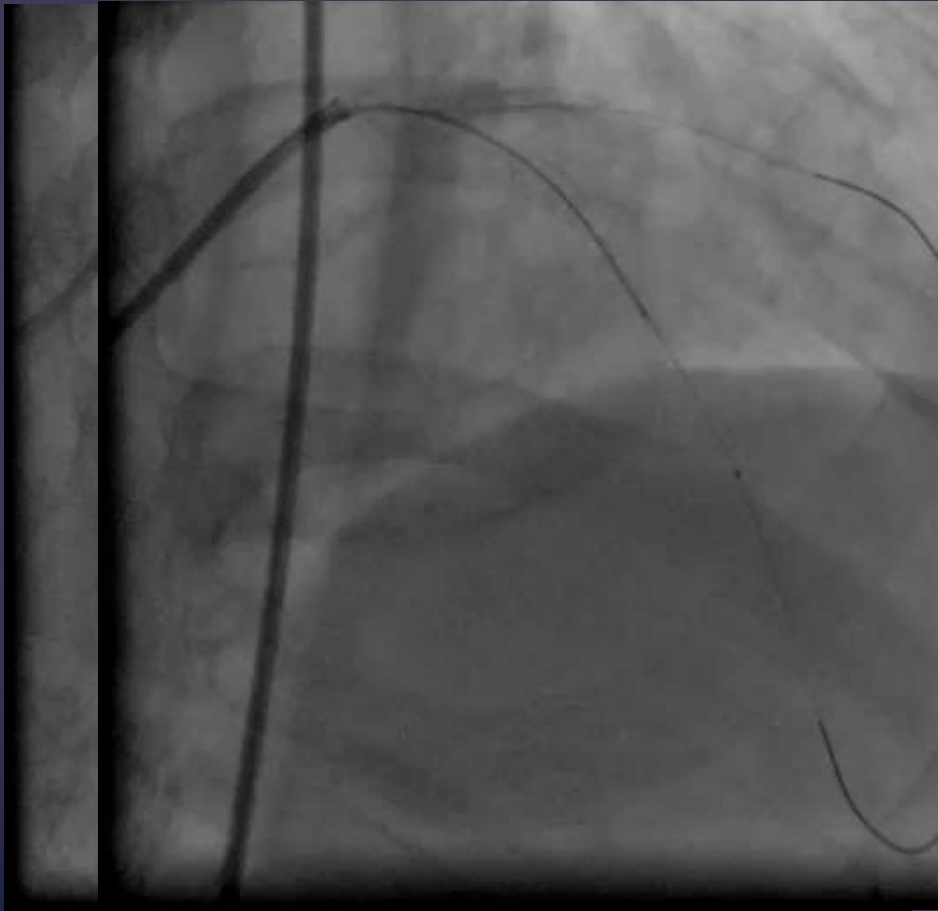# OFDI after stent implantation and final CAG

Progress after PCI
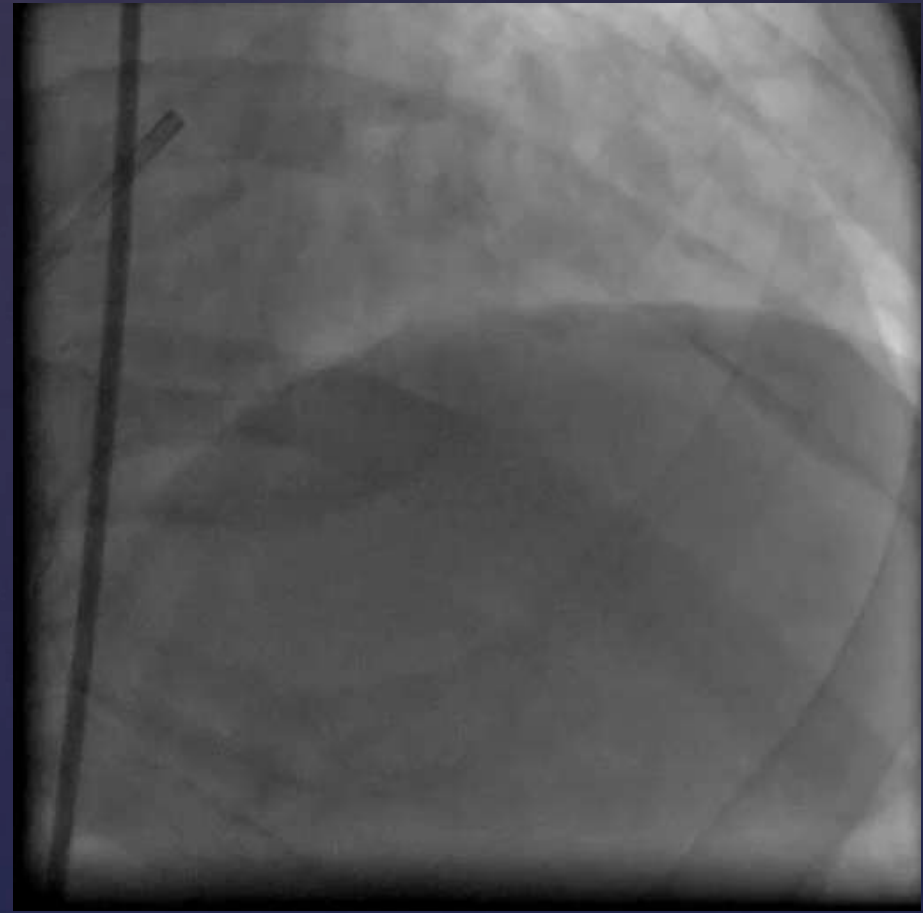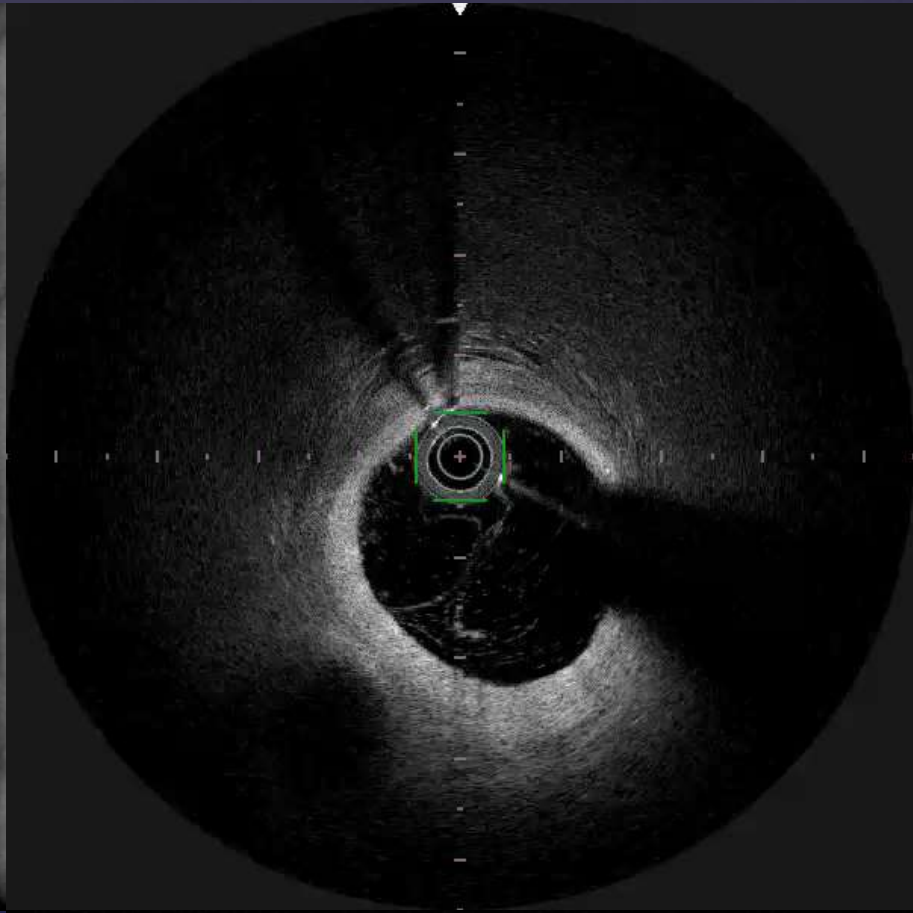
- IABP was removed two days later after PCI.

- Leaked peak CK level was 300.

- He had sudden onset chest pain eight days later after PCI .

- ECG showed ST elevation at precordial lead.

- Then, we performed emergent CAG.

CAG and
OFDI after thrombedtomy(day 13)

PCI to LAD and
OFDI after balloon dilatation

PCI to LAD
with Powered Lacross 3.5×8mm

Progress after subacute stent thrombosis

❧ Leaked peak CK level was 1500.

❧ IABP had been continued until seven days later after stent thrombosis.

❧ We performed CAG in order to check the lesion seven days later after stent thrombosis.

❧ And then he was discharged from our hospital 40 days after admission.

❧ We performed CAG and OFDI three months later .

OFDI 7 days later and 3 months later after stent thrombosis
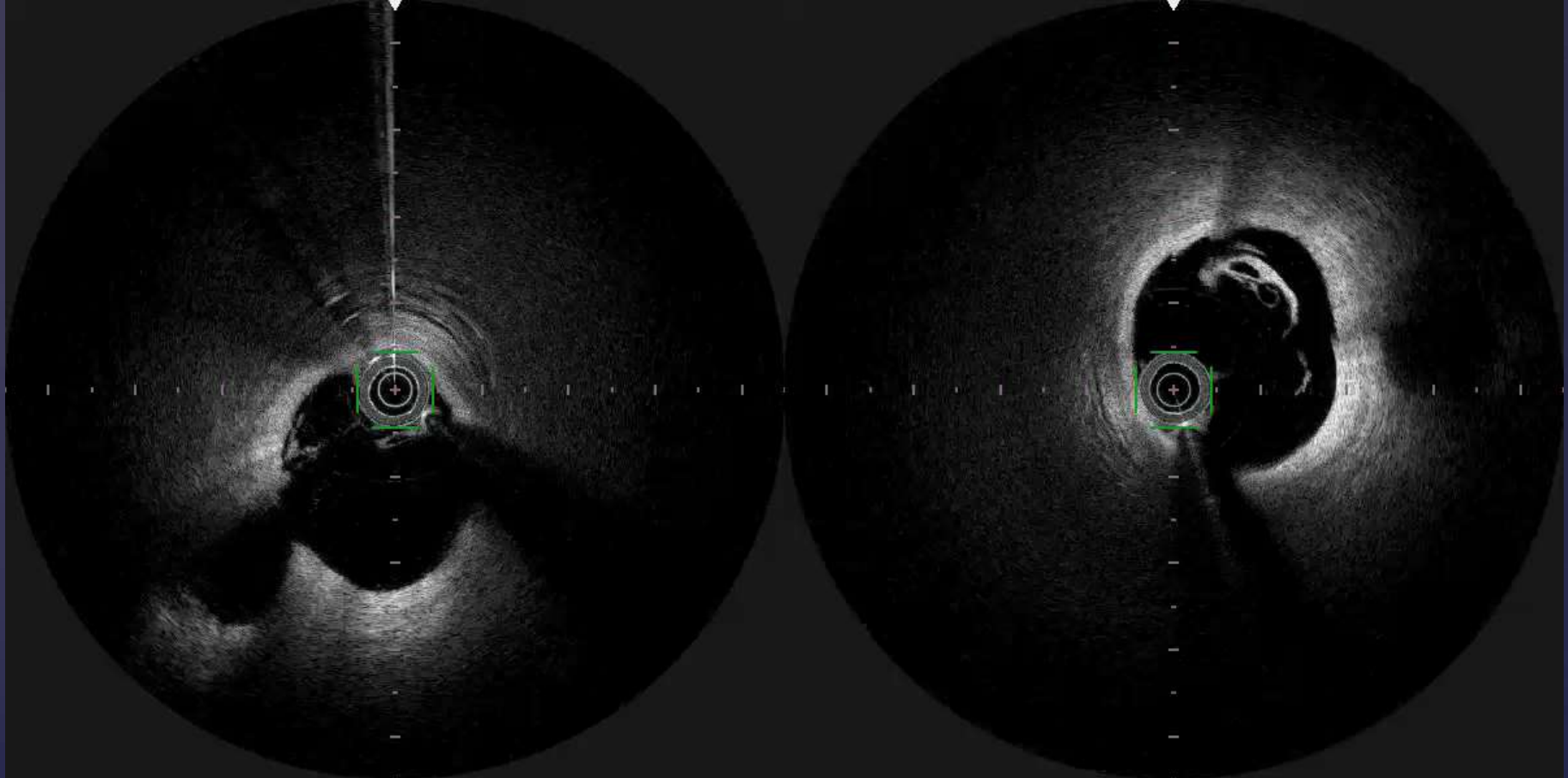
7days later   3 months later

Discussion

- The stent malapposition is predictor of stent thrombosis.

(Haasan et al.*Eur Heart J.* 2010;31:1172–1180.)

- In this case, the maximum stent malapposition area was large .

(Cook S *Circulation*. 2007;115:2426-2434.)

- And we found many thrombi around the stent malapposition site.

- Therefore we assessed this stent thrombosis was caused by lage stent malapposition.

- The stent malapposition had remained three months later .

Conclusion

- We experienced subacute stent thrombosis caused by large stent malapposition after Everolimus Eluting stent implantation .

- Consecutive observation of late-acquired malapposition by OFDI was performed in short period of time.