3rd IMAGING & PHYSIOLOGY Summit 2009

A Case of Intramural Hematoma During PCI

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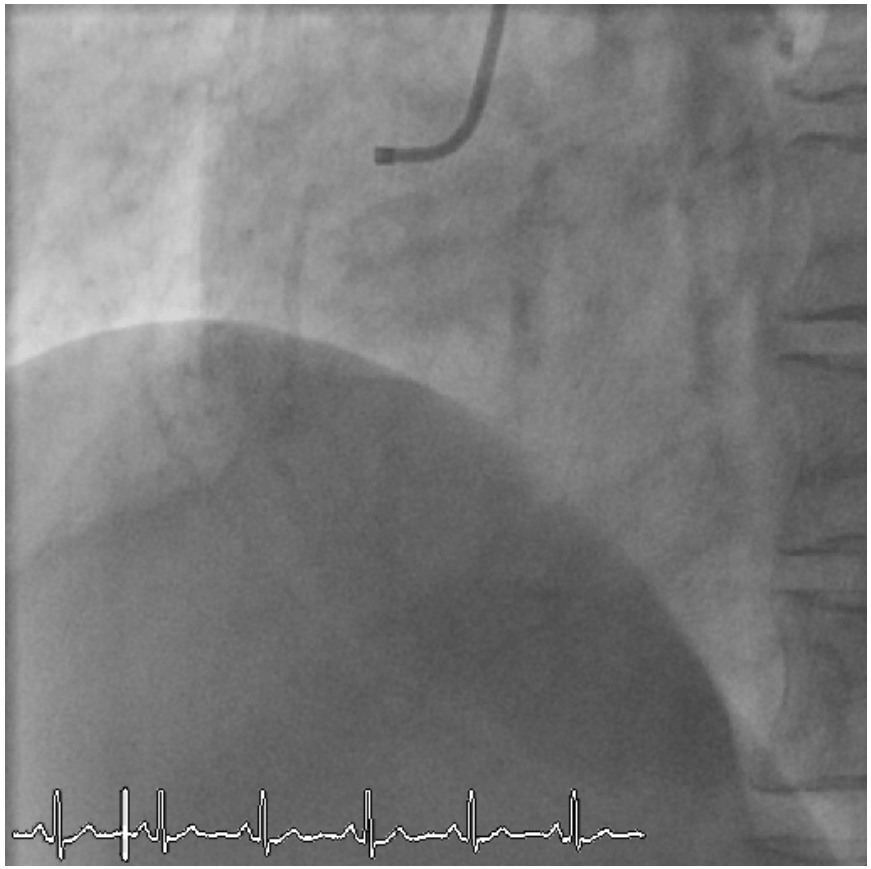
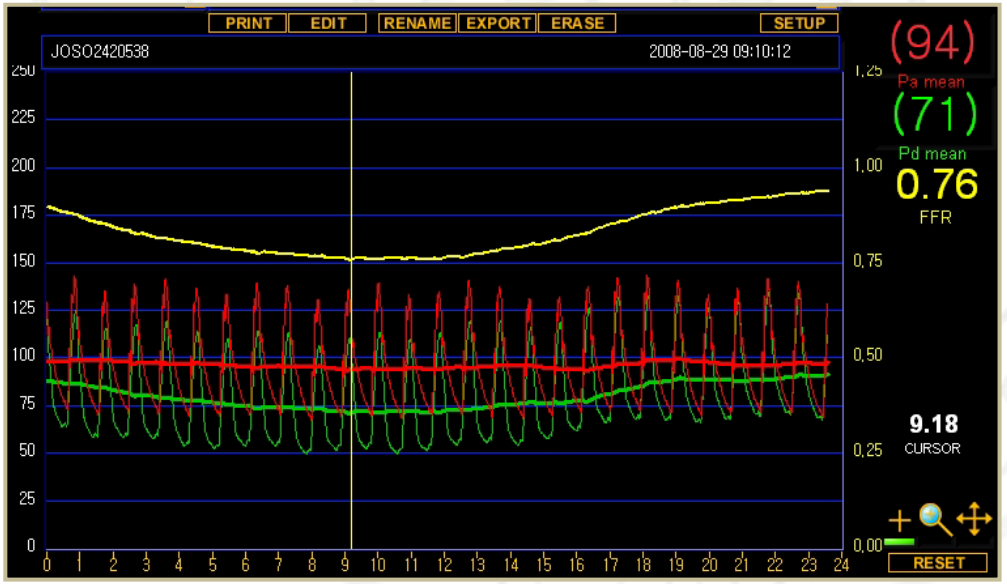
Patient Profile

- 66 YO/ Female
- C/C : typical chest pain for 2 weeks,
  aggravated pain for 1 day
- CVDRF : HTN (20 yrs)
- Vital sign : 140/87 – 72 – 17 – 36.7
- ECG : NSR, T inversion in V1-6
- Lab : TC/LDL 218/145.6 mg/dl
  CK-MB/cTnI 28.7/14.31 ug/L
- TTE : 53%, hypokinesia of LAD territory
- Clinical Dx : *NSTEMI*

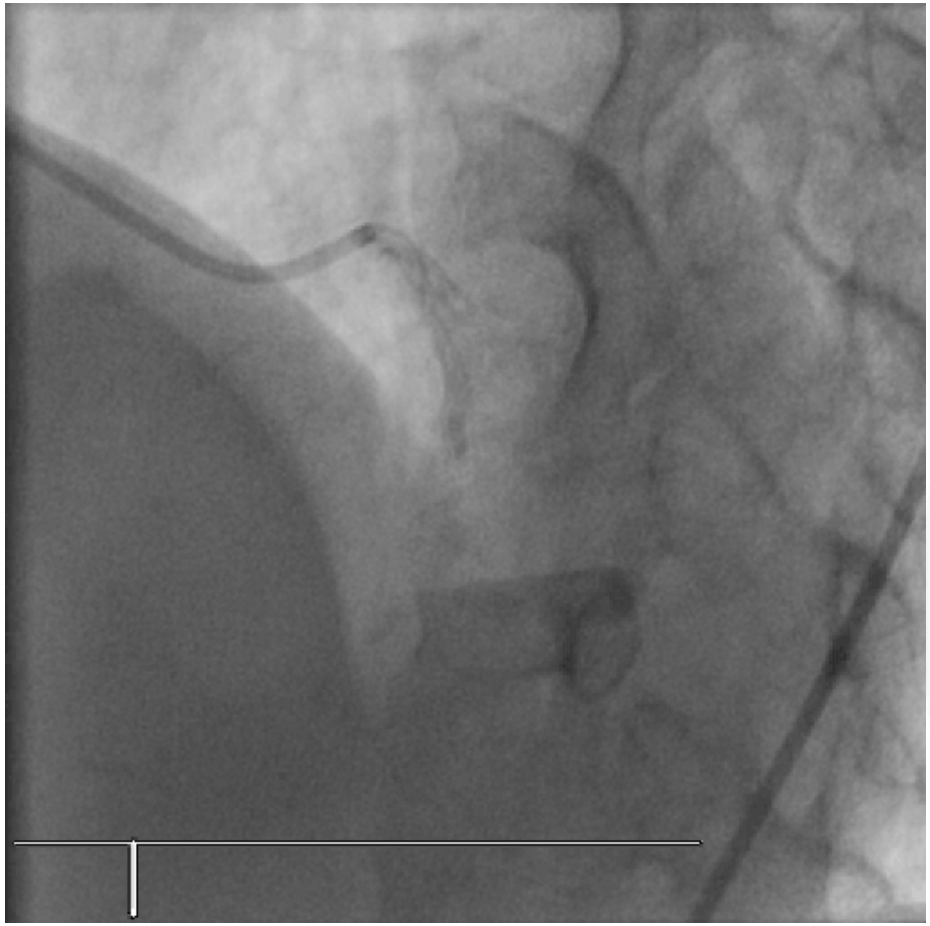
Baseline CAG

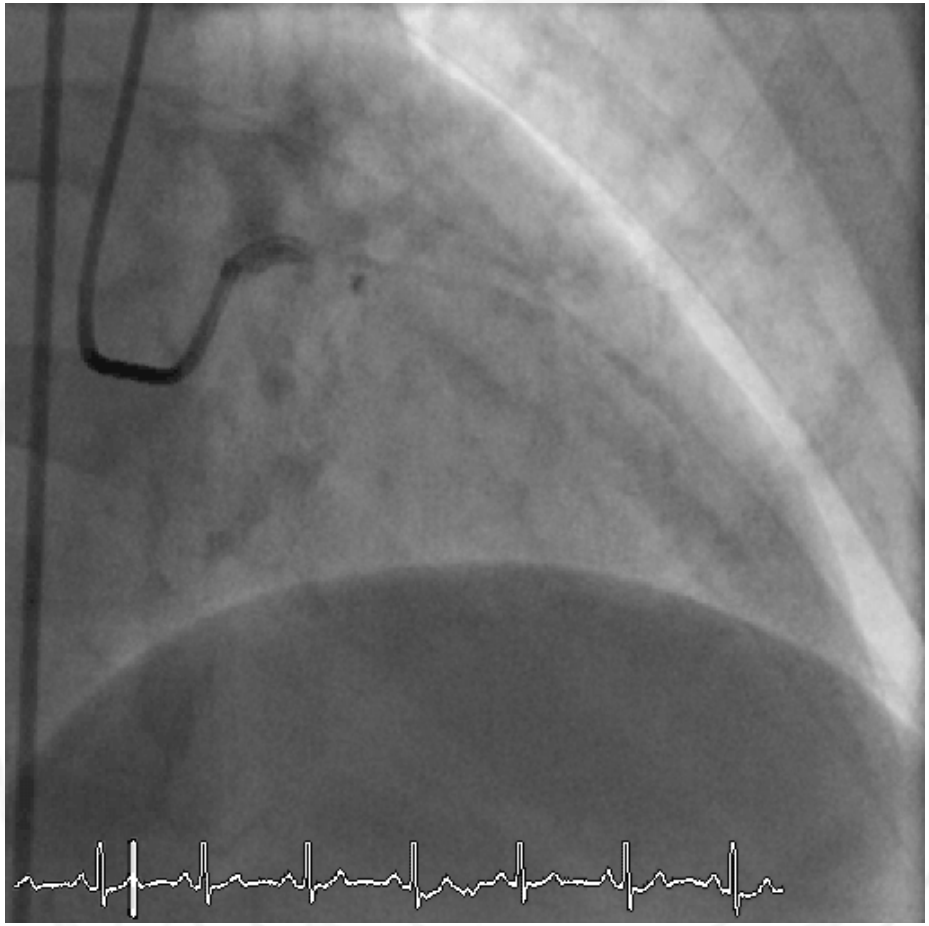


FFR

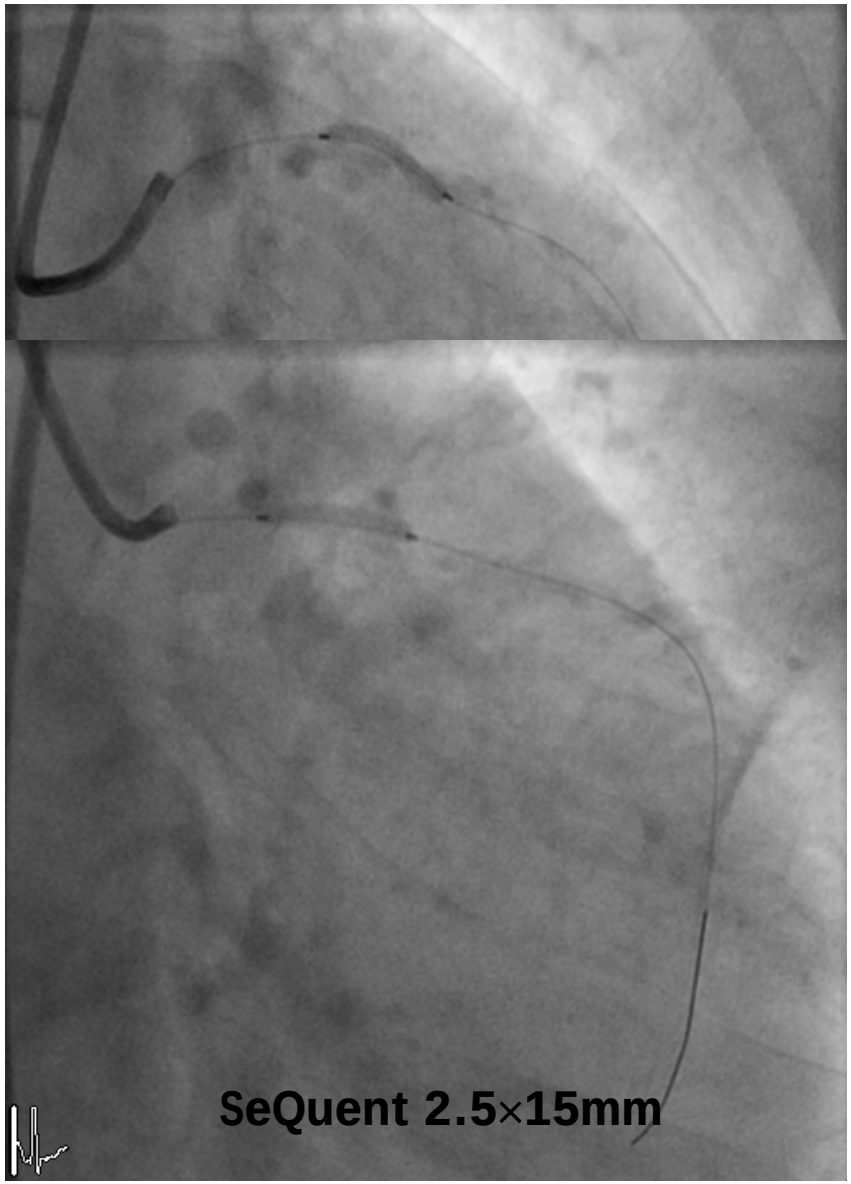


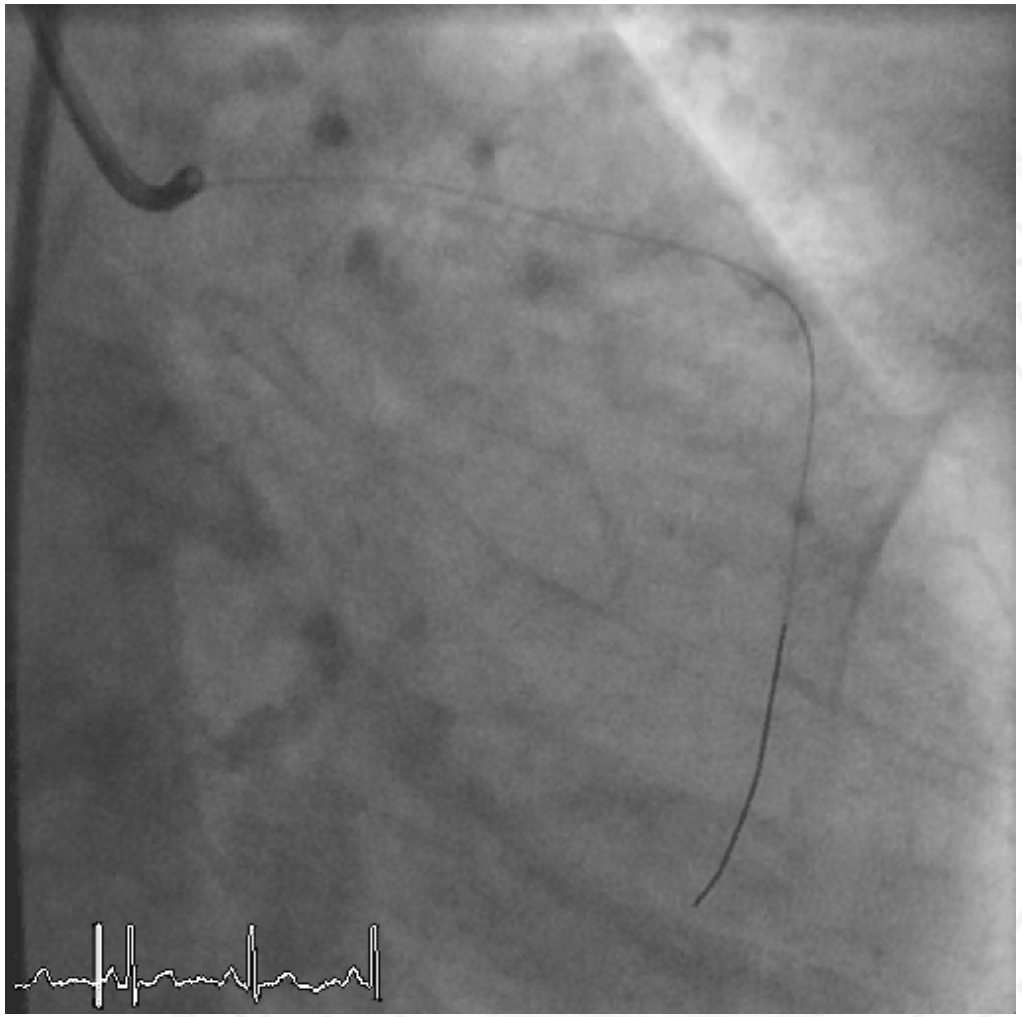
Baseline CAG



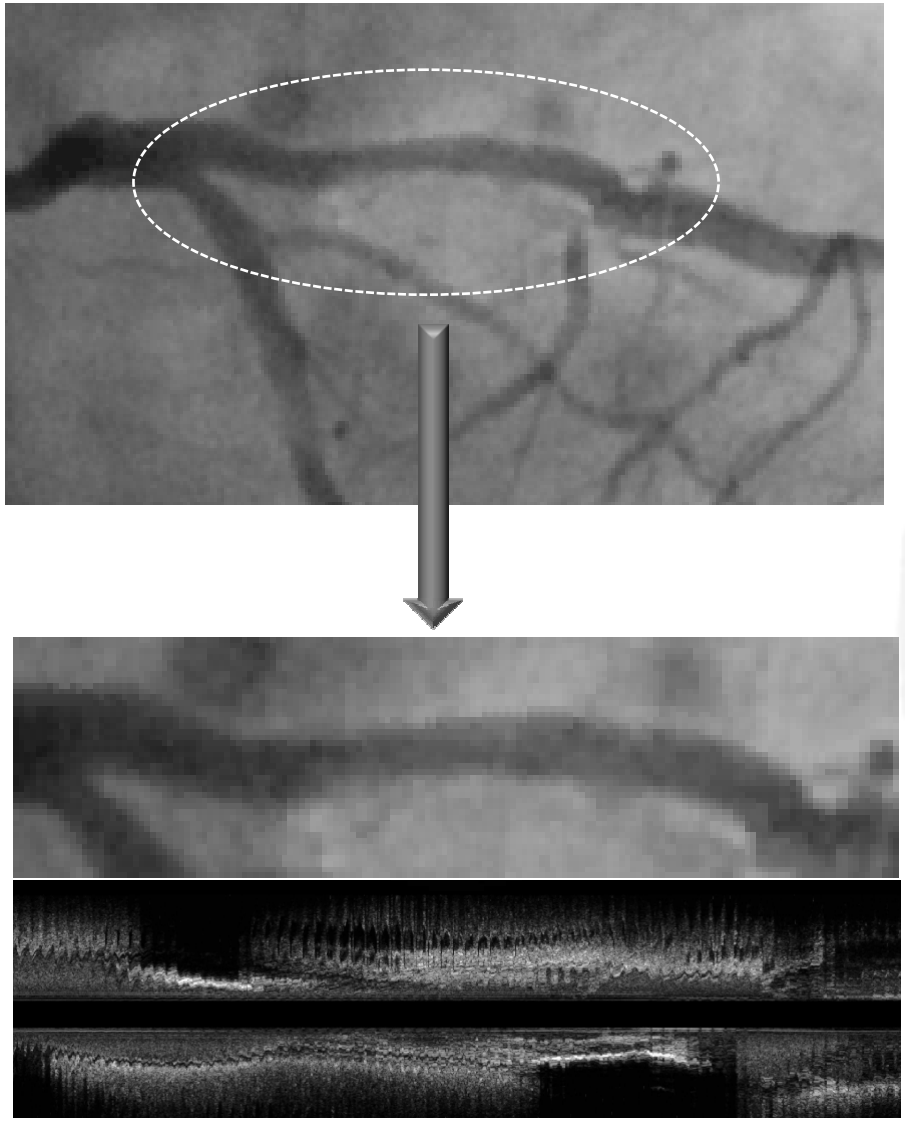


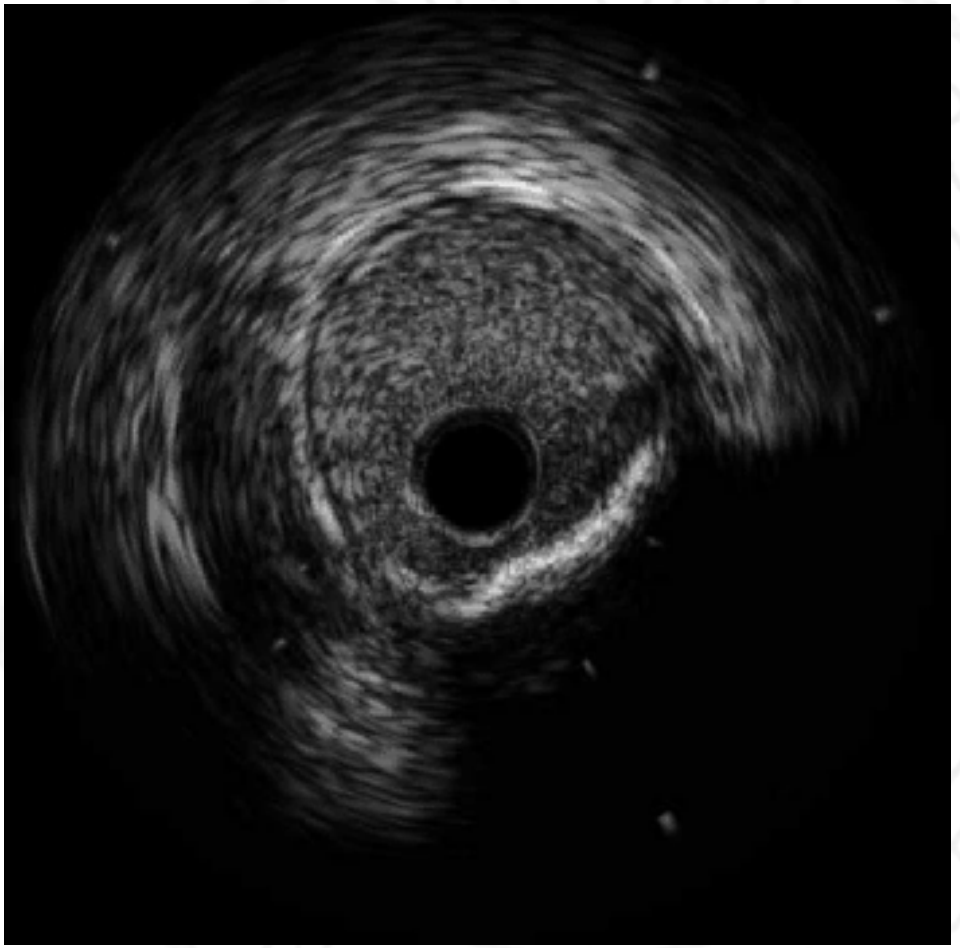
POBA for LAD



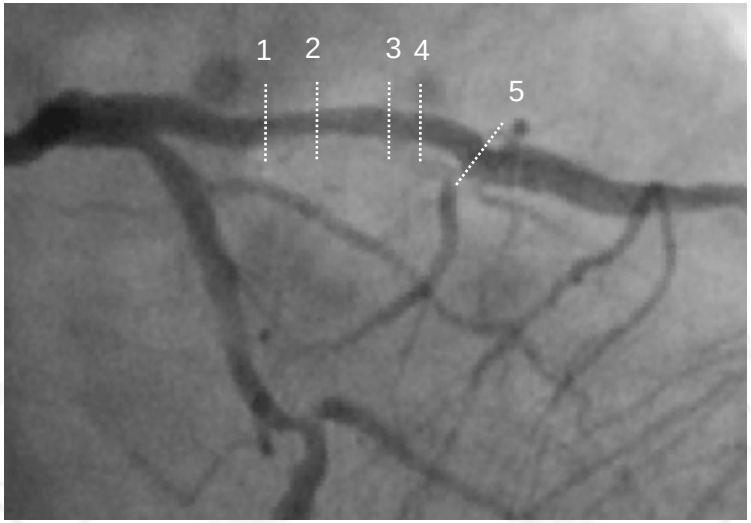


IVUS Finding After POBA

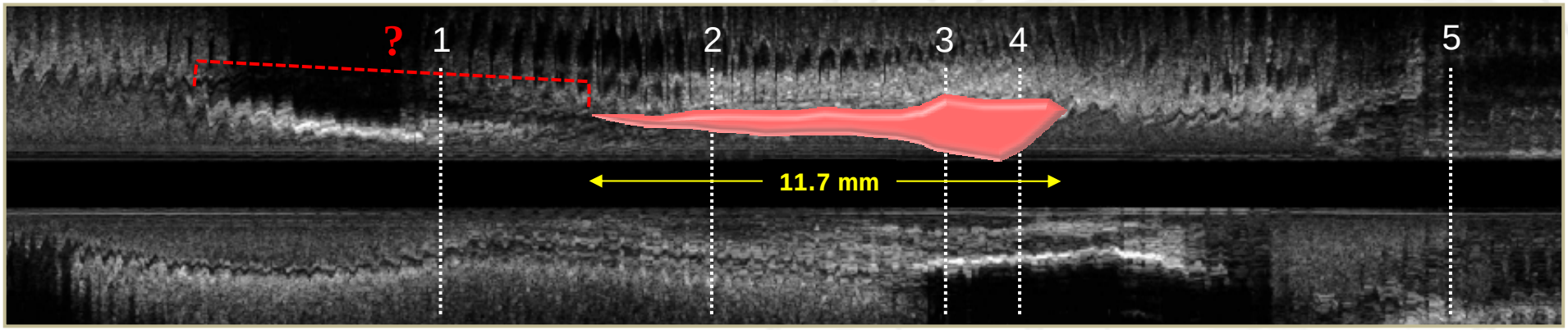


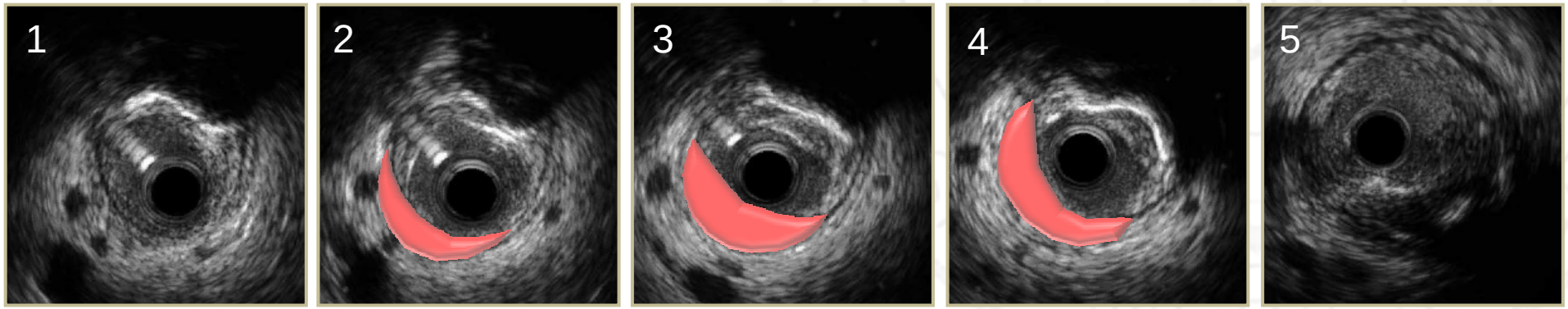


Focused IVUS Images

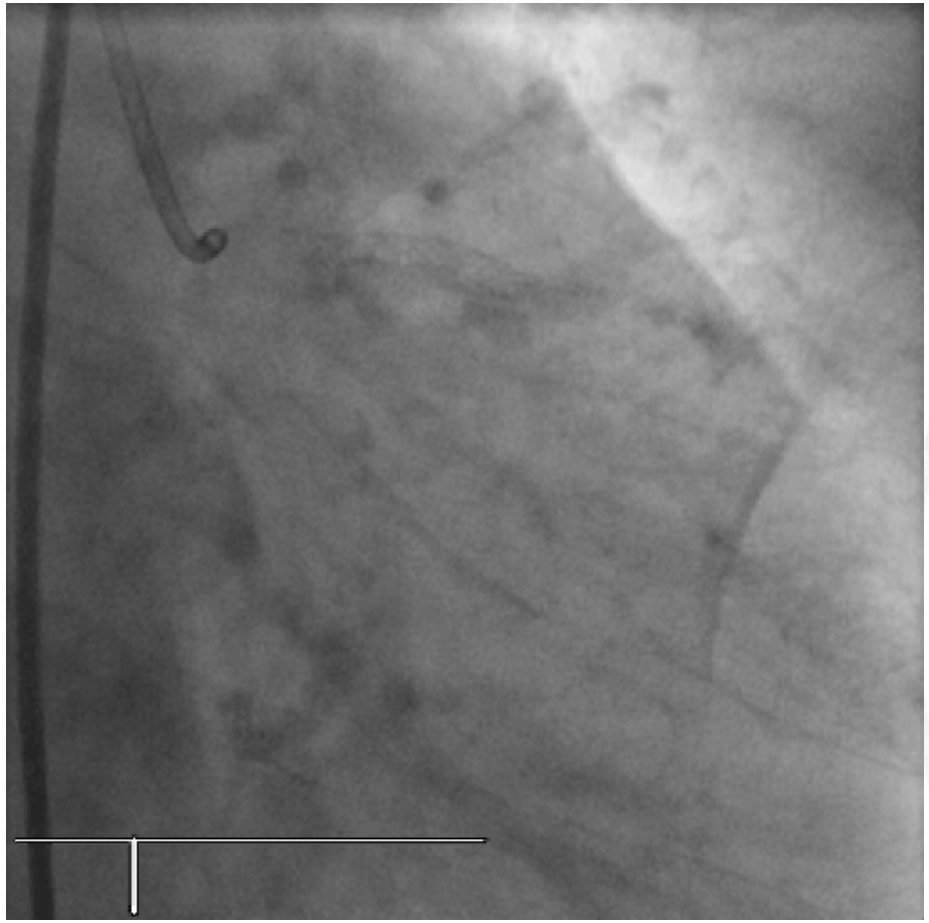


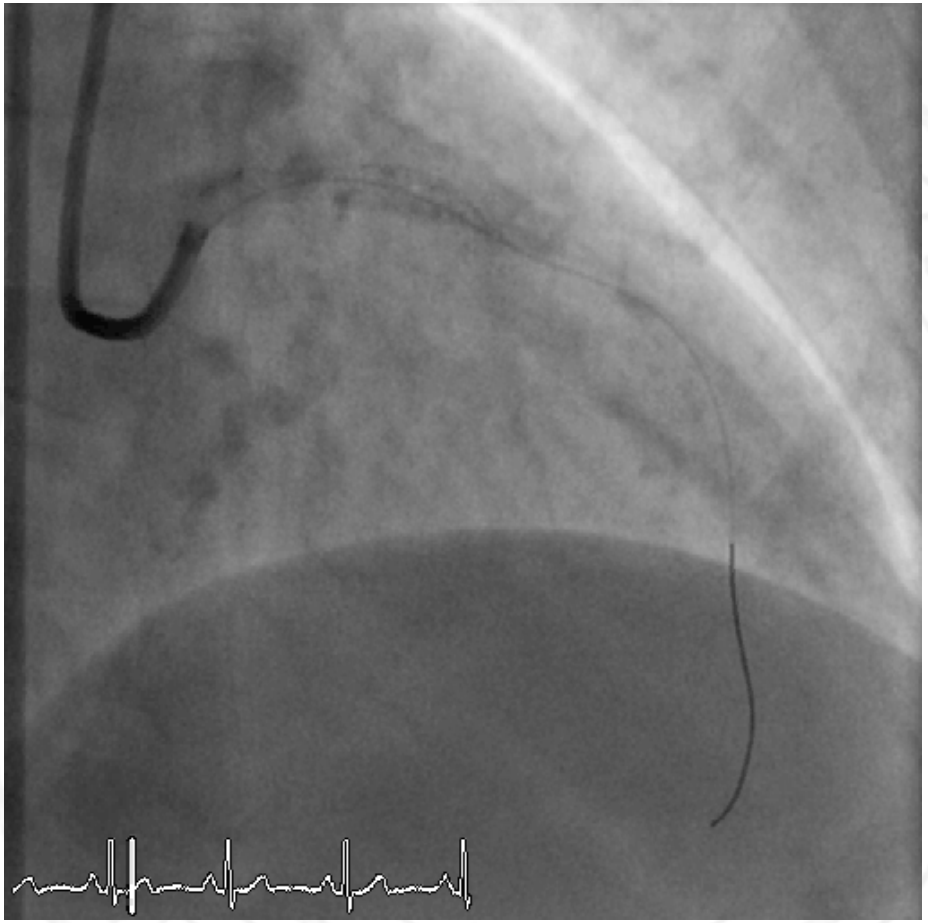
Intramural hematoma





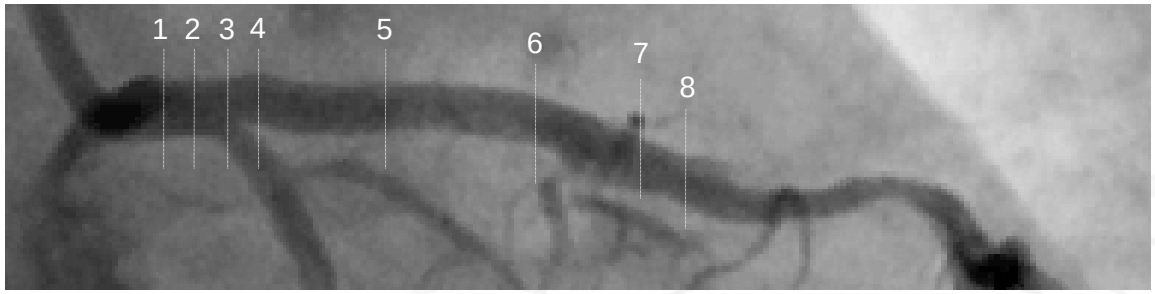
Stenting & Post-PCI CAG



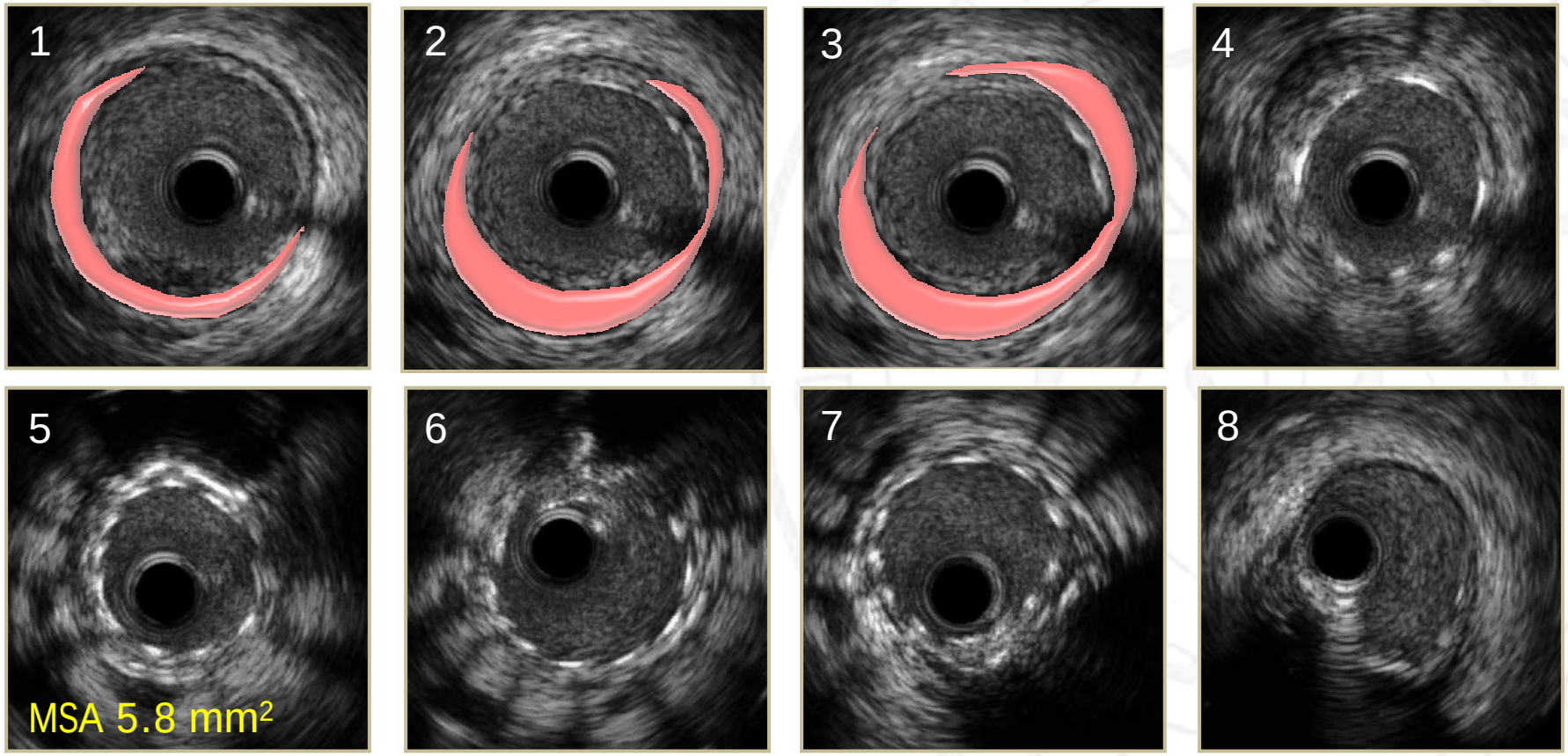


IVUS Images After Stenting

Intramural hematoma



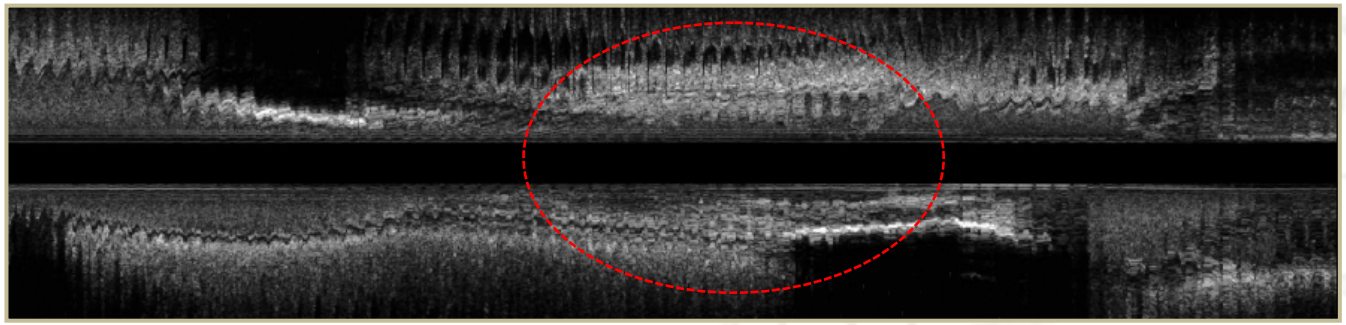
proximal

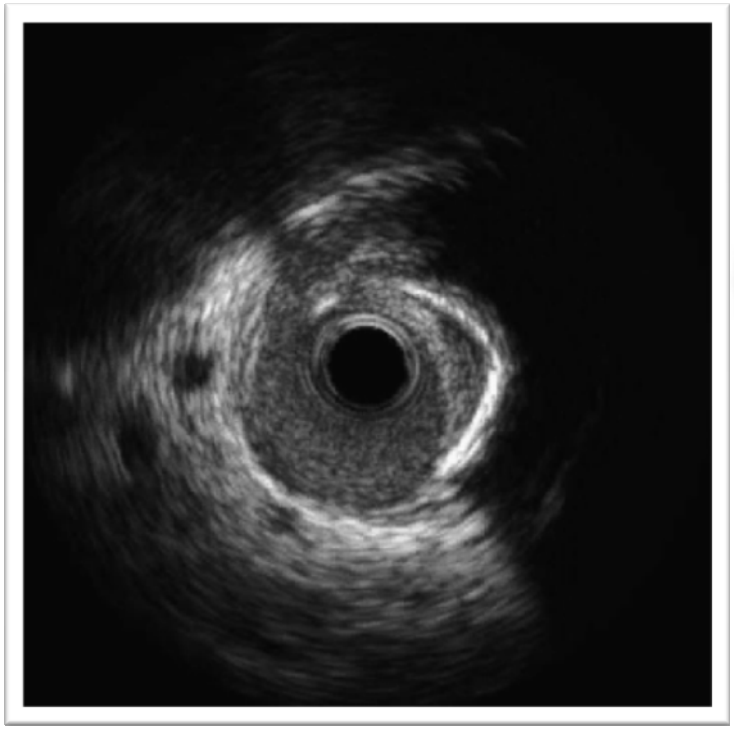


distal

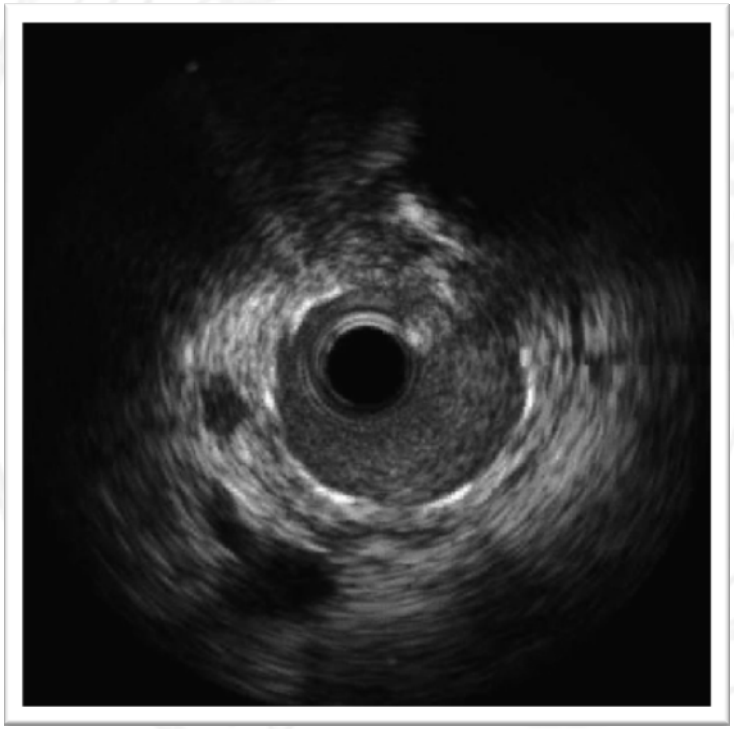
IVUS Imaging: Post-POBA vs. Post-Stenting

intramural hematoma after POBA





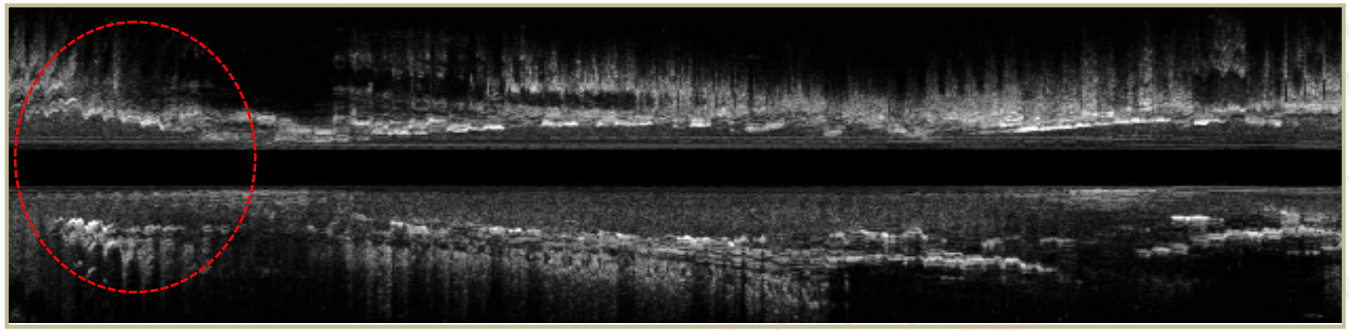
Post-POBA

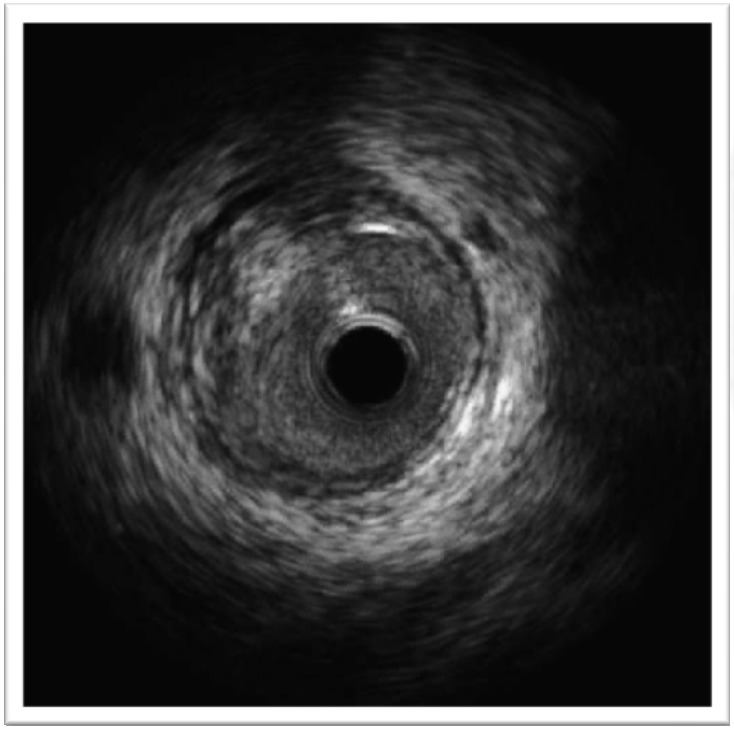


Post-Stenting

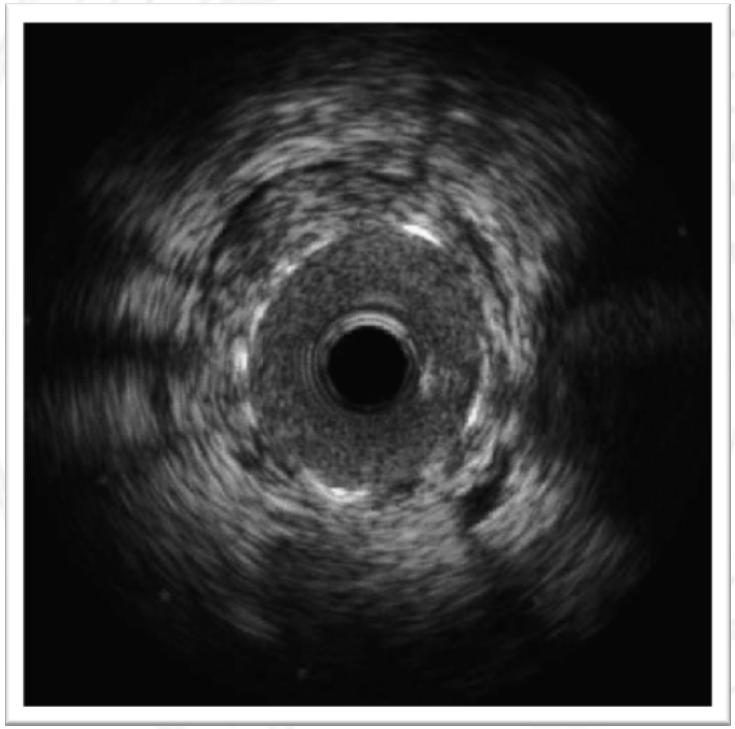
IVUS Imaging: Post-POBA vs. Post-Stenting

intramural hematoma *after stenting*





Post-POBA



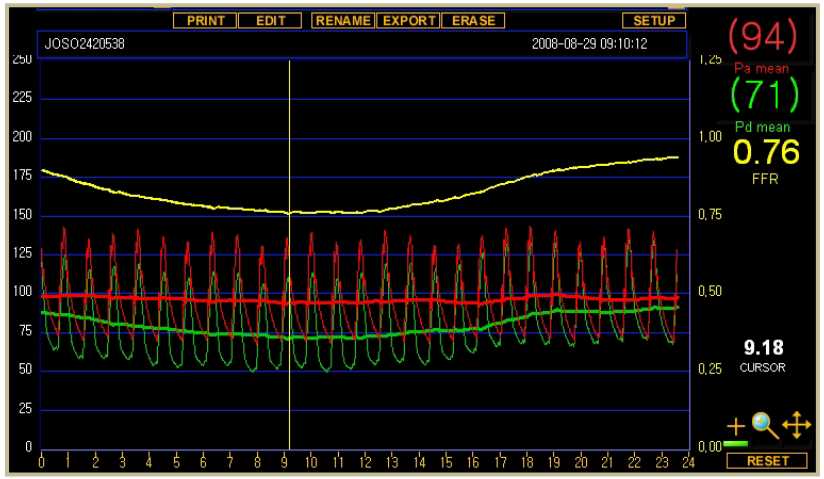
Post-Stenting

Medications and Clinical Outcome During 9 Months

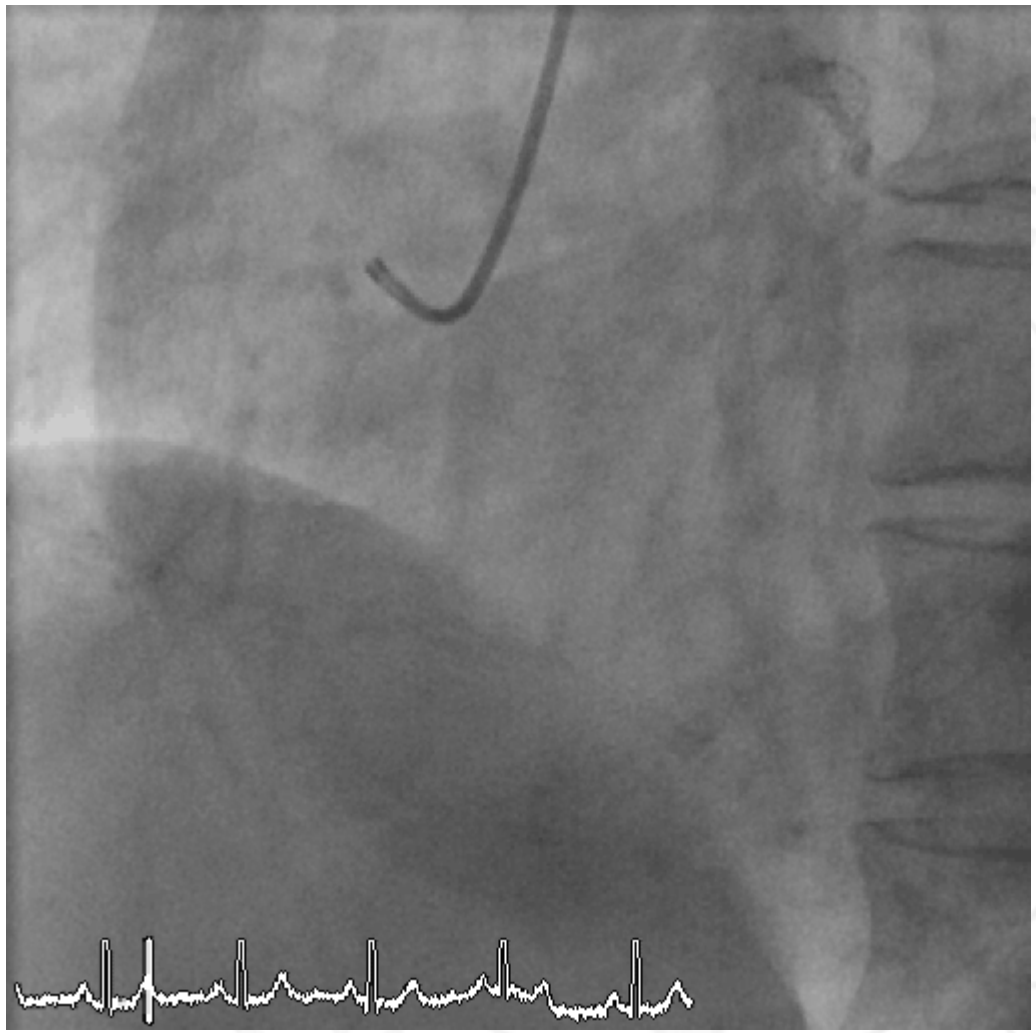
- ASA 200 mg
- Clopidogrel 75 mg,
- ISMN 50 mg
- Carvedilol 12.5 mg
- Telmisartan 40 mg
- HCTZ 25 mg
- Atorvastatin 20 mg

- No chest pain / No clinical events

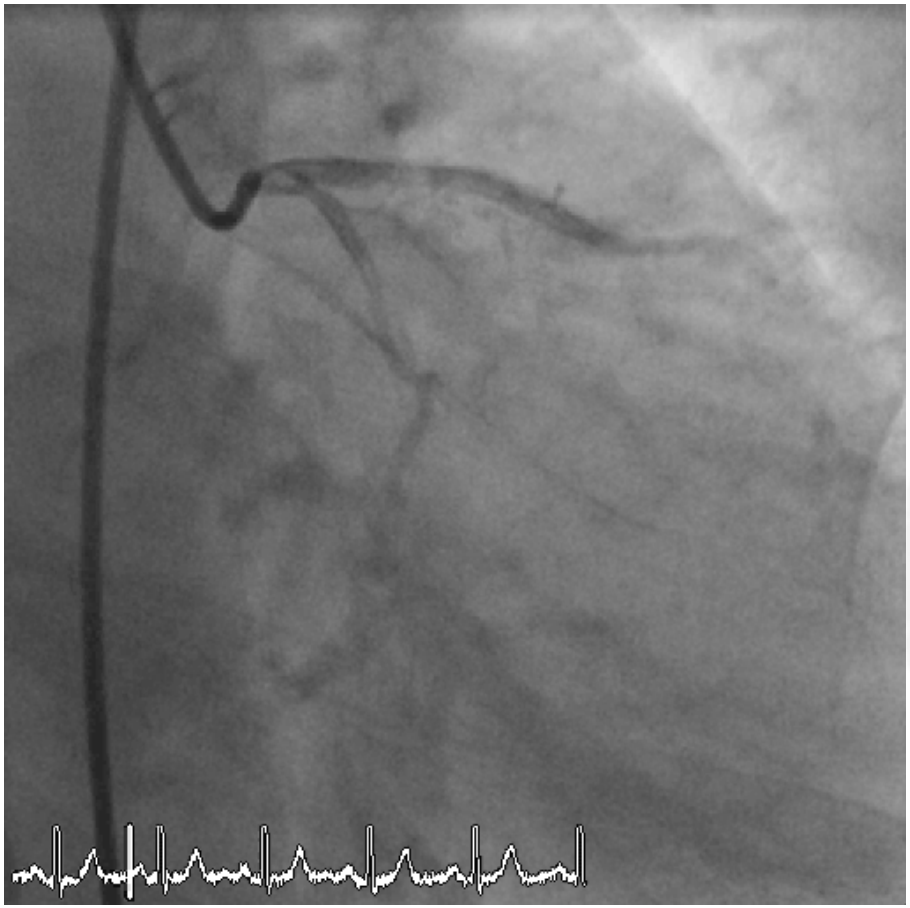
FU CAG @ 9 Months

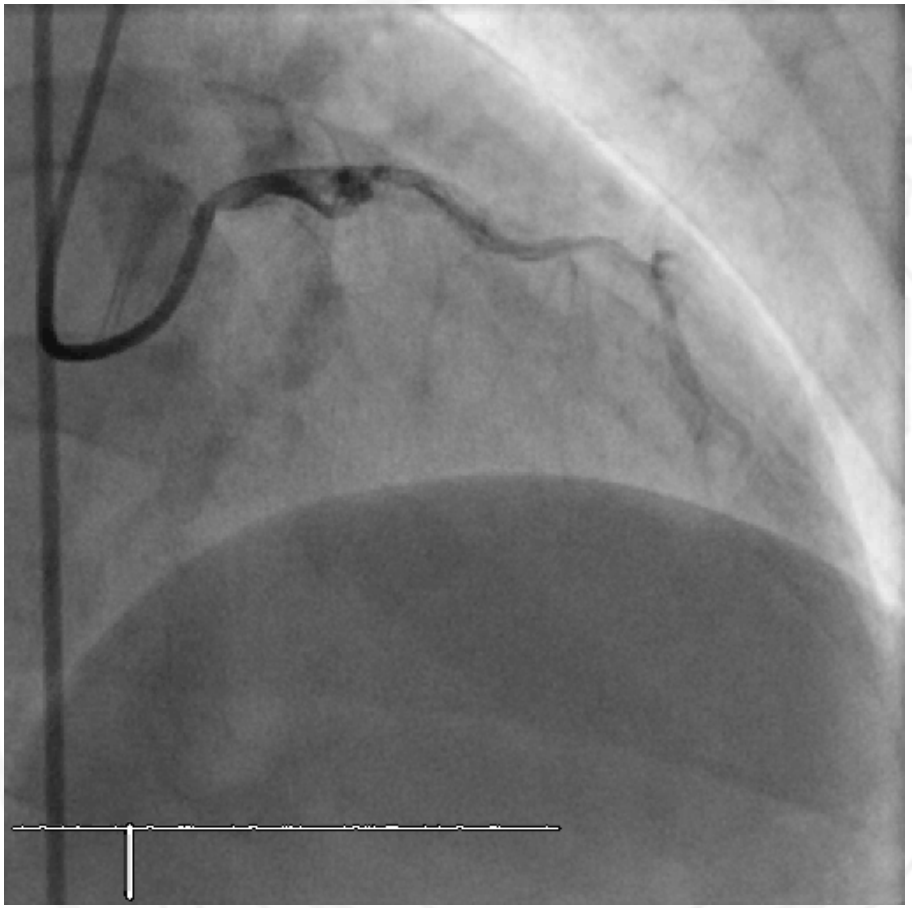


FFR: 8 Months ago



FU CAG @ 9 Months





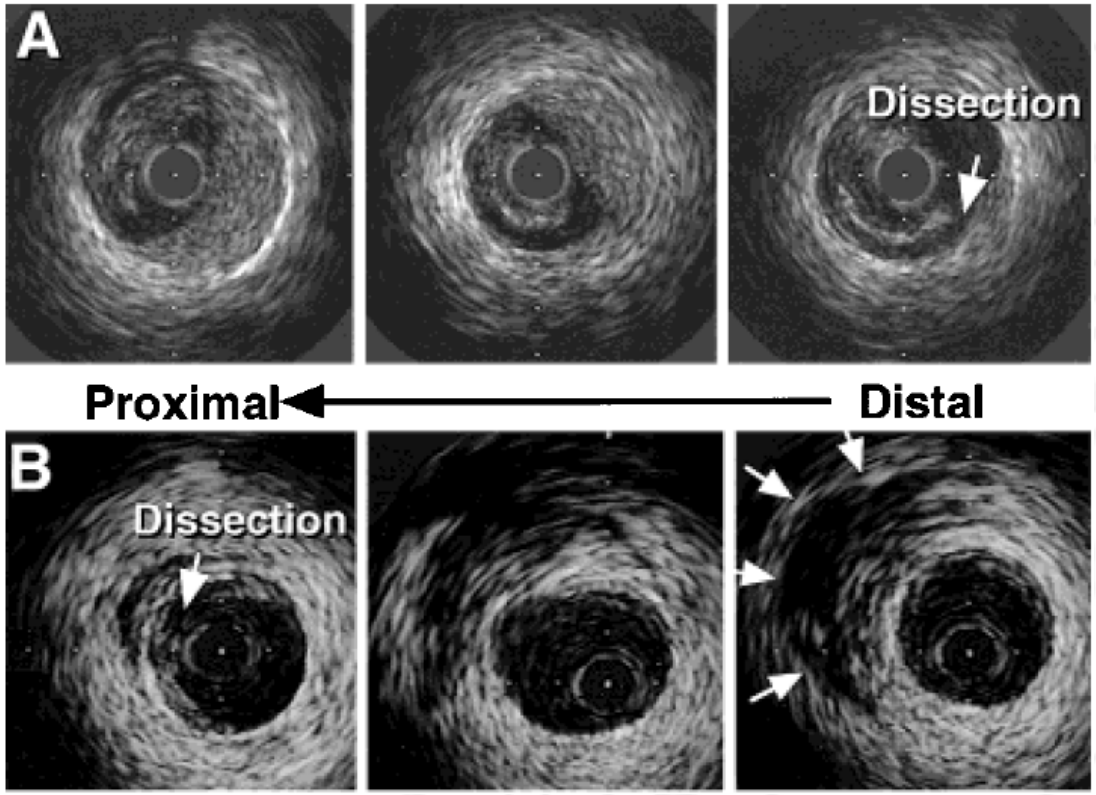
THANK YOU FOR YOUR ATTENTION

Coronary Hematoma

typically presents as a blood-filled space with a homogeneous appearance of a relatively echo-bright pattern

Intramural (intravascular) hematoma

Extramural (extravascular) hematoma



presents with an echo-dim pattern due to the dilution of red blood cell concentration and dissemination throughout an echogenic adventitia

Catheterization and Cardiovascular Interventions 1999;47:475–490

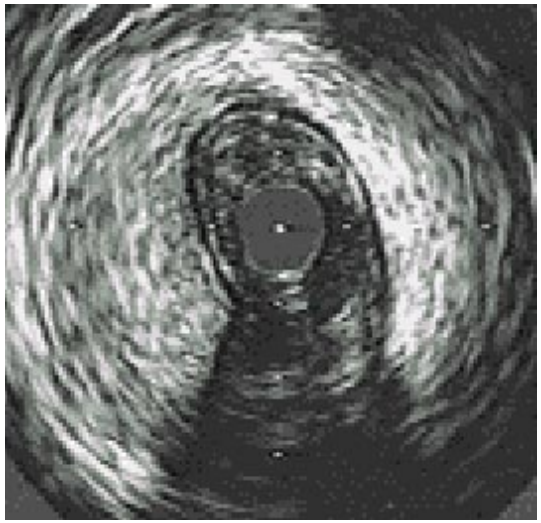
Coronary Hematoma

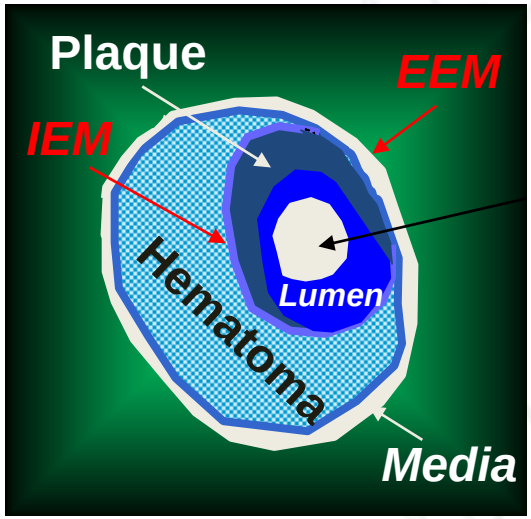
- At the site of blood entry into the adventitia, can be a clue to the presence of a hematoma.
- The position of the hematoma (mural side vs. free wall) can help in deciding which to treat.
- IVUS can assess the severity of lumen compromise and the possibility of extensive expansion (especially on the non-mural side) and guide appropriate treatment.
- Careful attention to antithrombolytic and antiplatelet treatment is important in the setting of an extravascular hematoma

Catheterization and Cardiovascular Interventions 1999;47:475–490

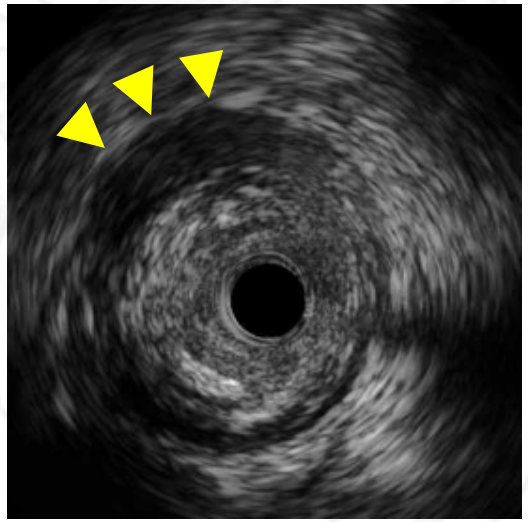
Intramural Hematoma

- crescent – shaped with straightening of IEM
- separation between IEM and EEM ⇨ accumulation of blood
  : usually homogenous & hyperechoic
- also contain distinct echolucent zones within the hyperechoic areas
  : accumulation of contrast or saline within the hematoma space





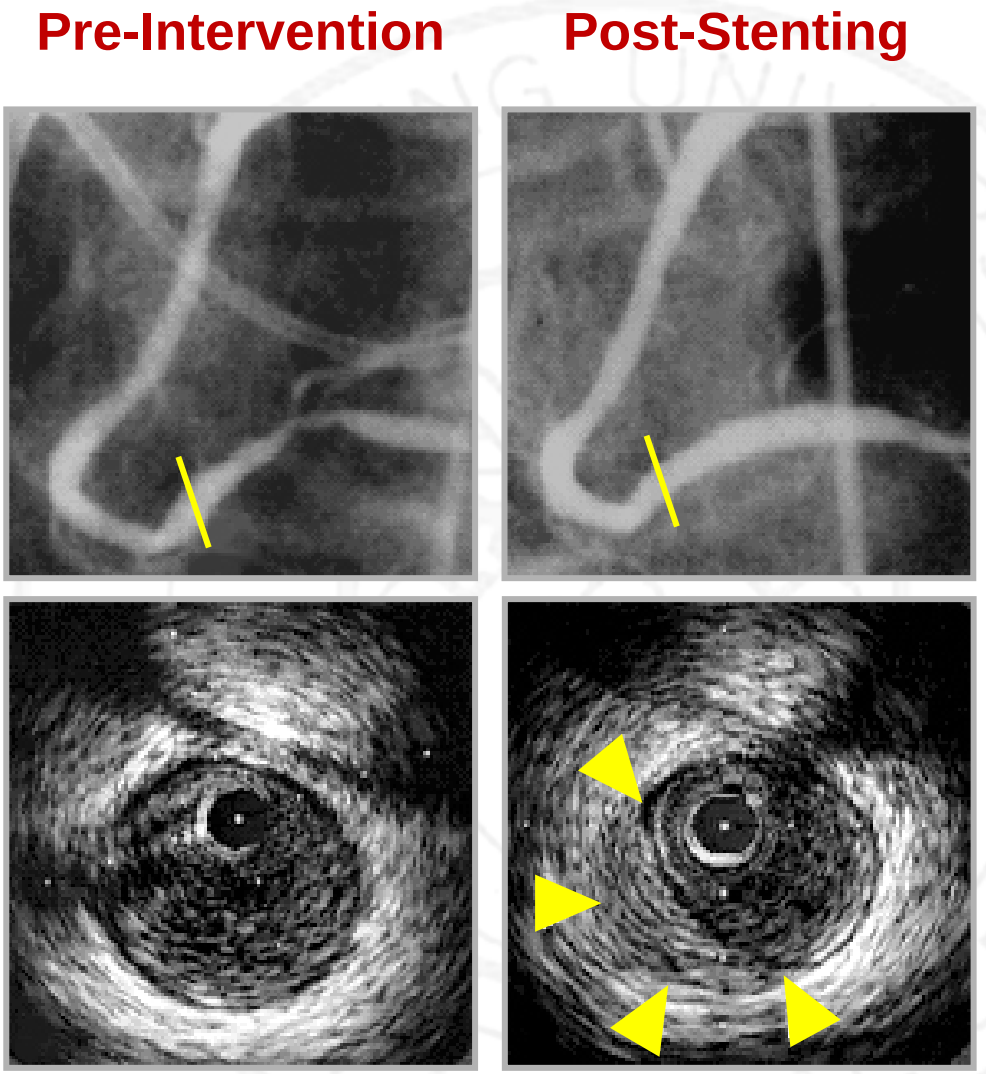
IVUS catheter



- a dissection into the media where accumulation occurred because of a lack of re-entry

Intramural Hematoma

- IVUS finding
  : typically, crescent-shaped with straightening of IEM
- 6.9% of PCIs (69/1025).
- mech : dissection into where blood accumulated because of a lack of re-entry.
- 1/3 of US-identified hematoma
  : angiographic abnormality (-)
- high rate of
  : NQMI, sudden death, need for repeat revascularization



Maehara A, et al. Circulation 2002;105:2037-42