



1st
Joint
Meeting

5th **IMAGING & PHYSIOLOGY SUMMIT** and
6th **CHRONIC TOTAL OCCLUSION LIVE 2012**

JANUARY 6(FRI) - 7(SAT), 2012
ASAN MEDICAL CENTER, SEOUL, KOREA

www.imaging-physiology.com
www.cto-live.com

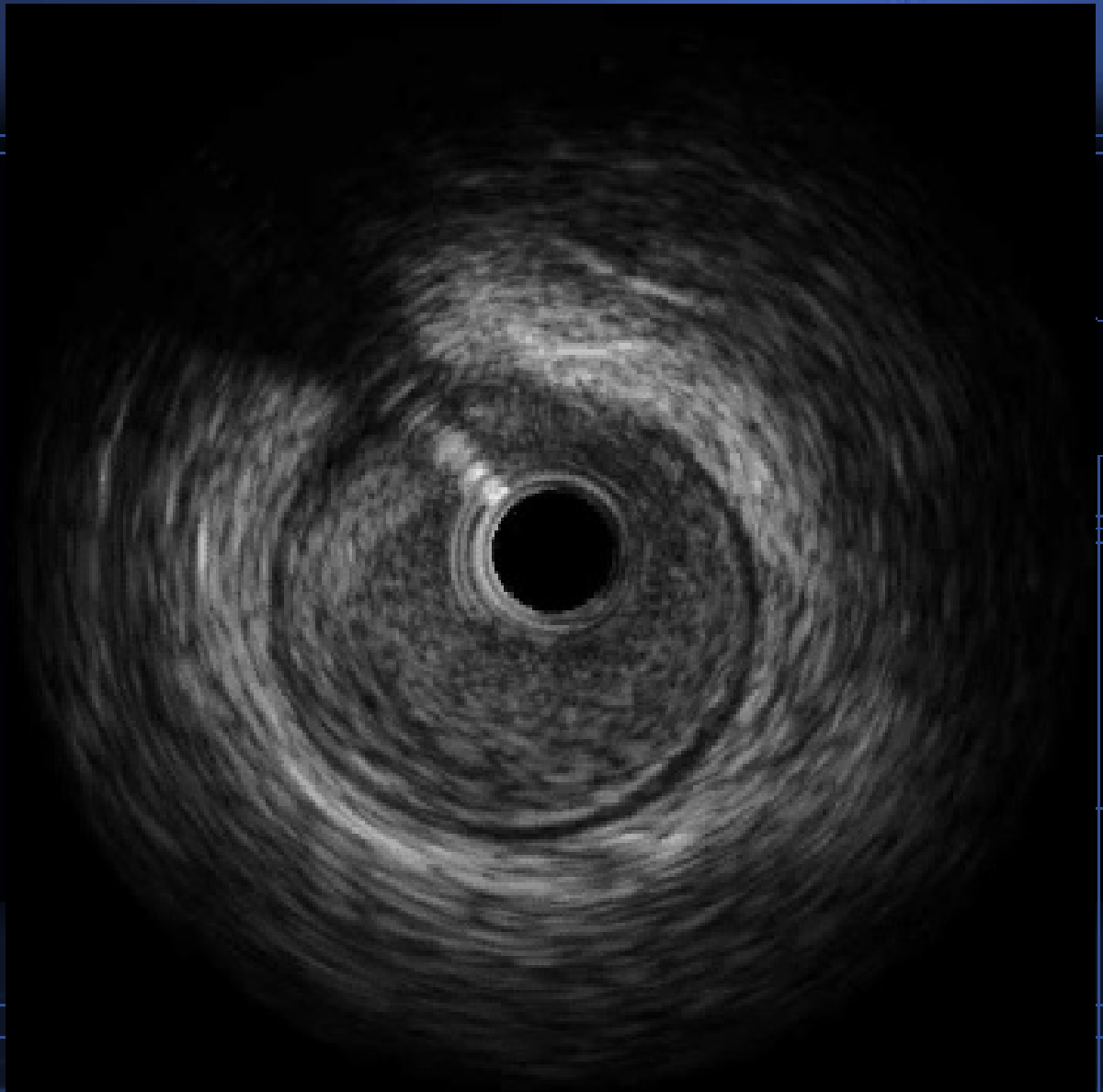


IVUS and OCT Evaluation for Acute Complications of PCI

Young Joon Hong, MD

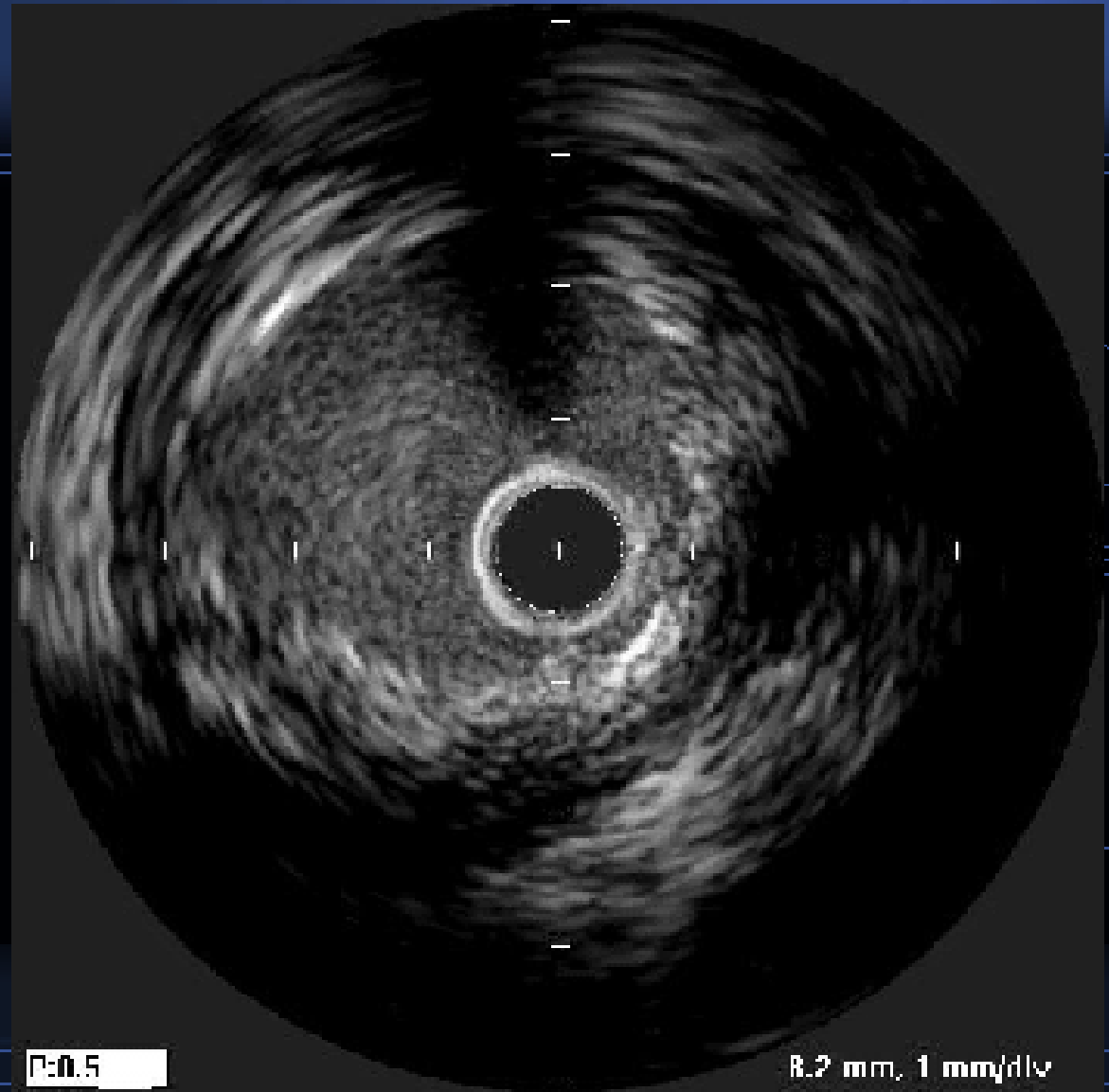
**Department of Cardiology, Chonnam National University Hospital,
Gwangju, Korea**

Balloon Angioplasty



Dissection after PTCA

Stent Implantation



Dissection after Stenting

59/F Stable Angina

- **C.C: Effort angina**
- **V/S: BP: 126/84 mmHg, PR: 56/min**
- **CK / CK-MB / TnT: 141U/L / 5.33U/L / <0.01ng/mL**

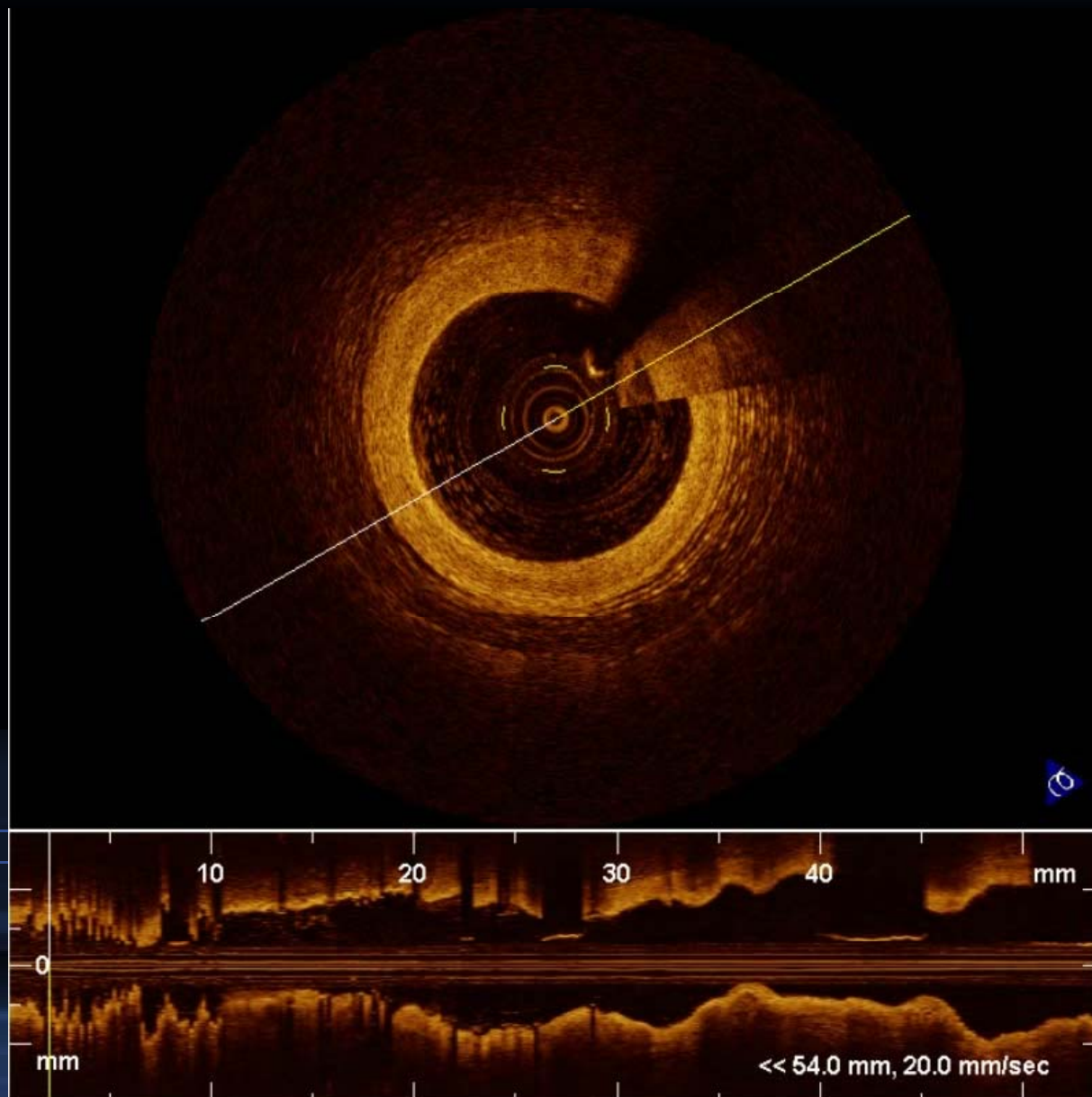
CAG

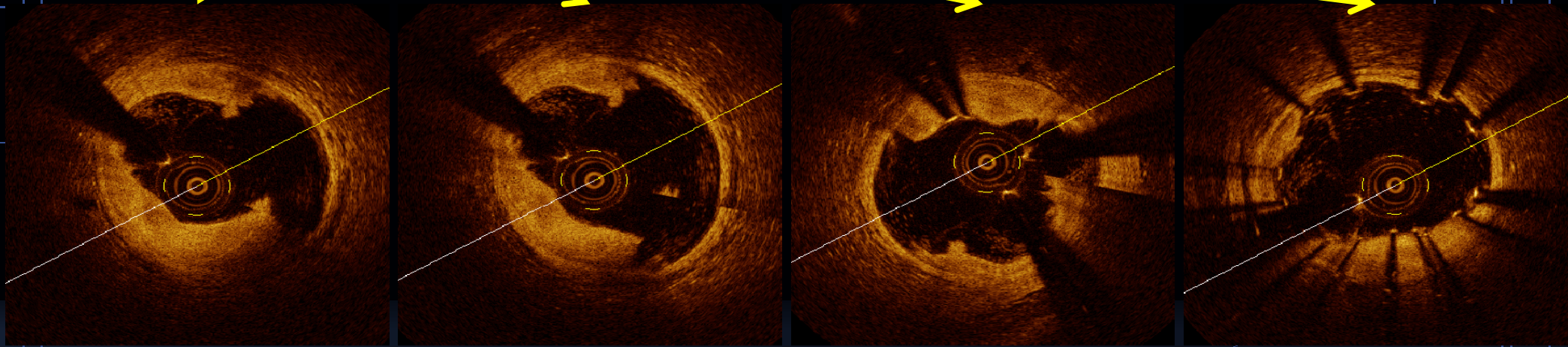
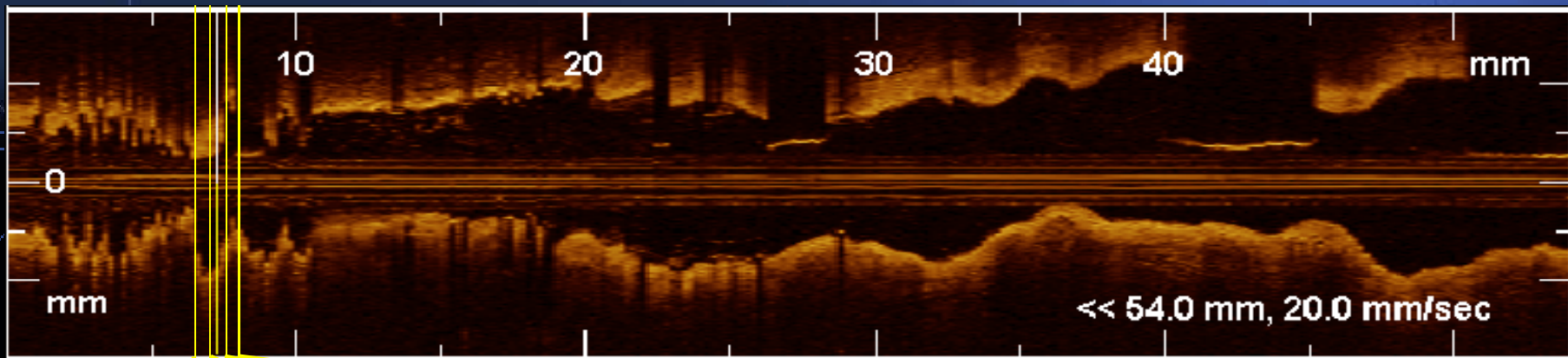


2.75*18mm Stent Implantation



OCT Finding



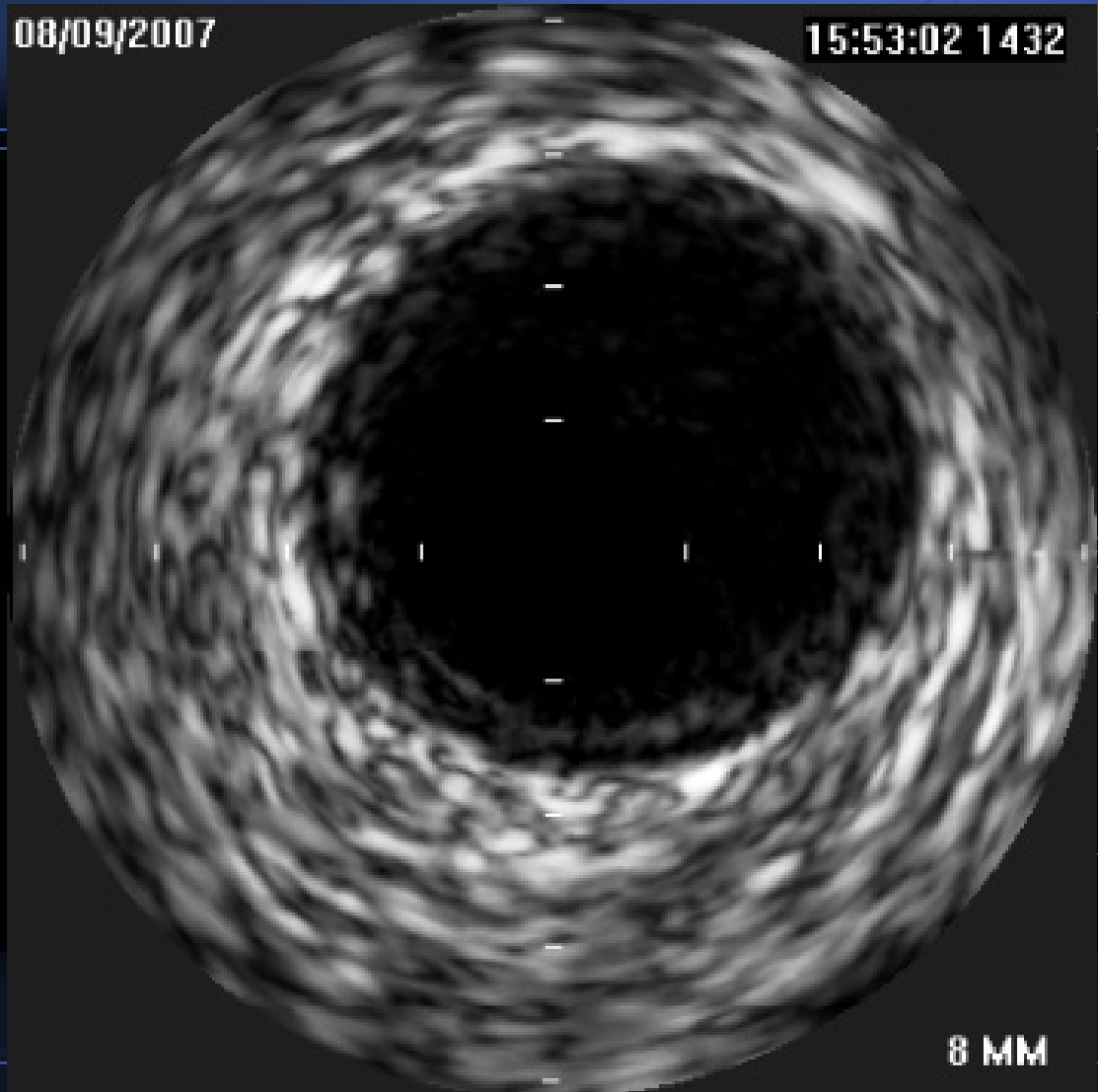


Distal Edge Dissection

After Guiding
Catheter
Engagement

08/09/2007

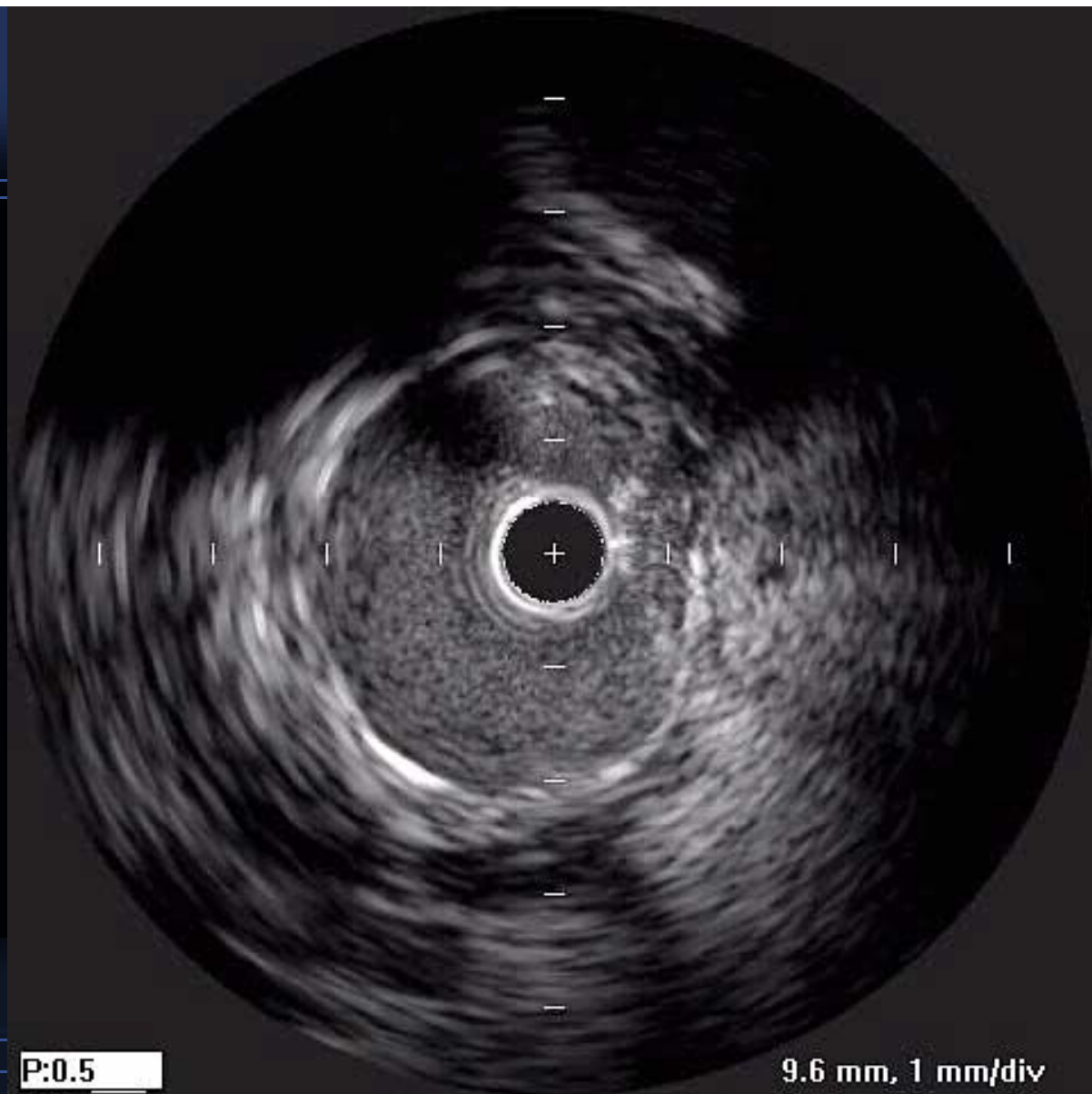
15:53:02 1432



8 MM

Intramural Hematoma

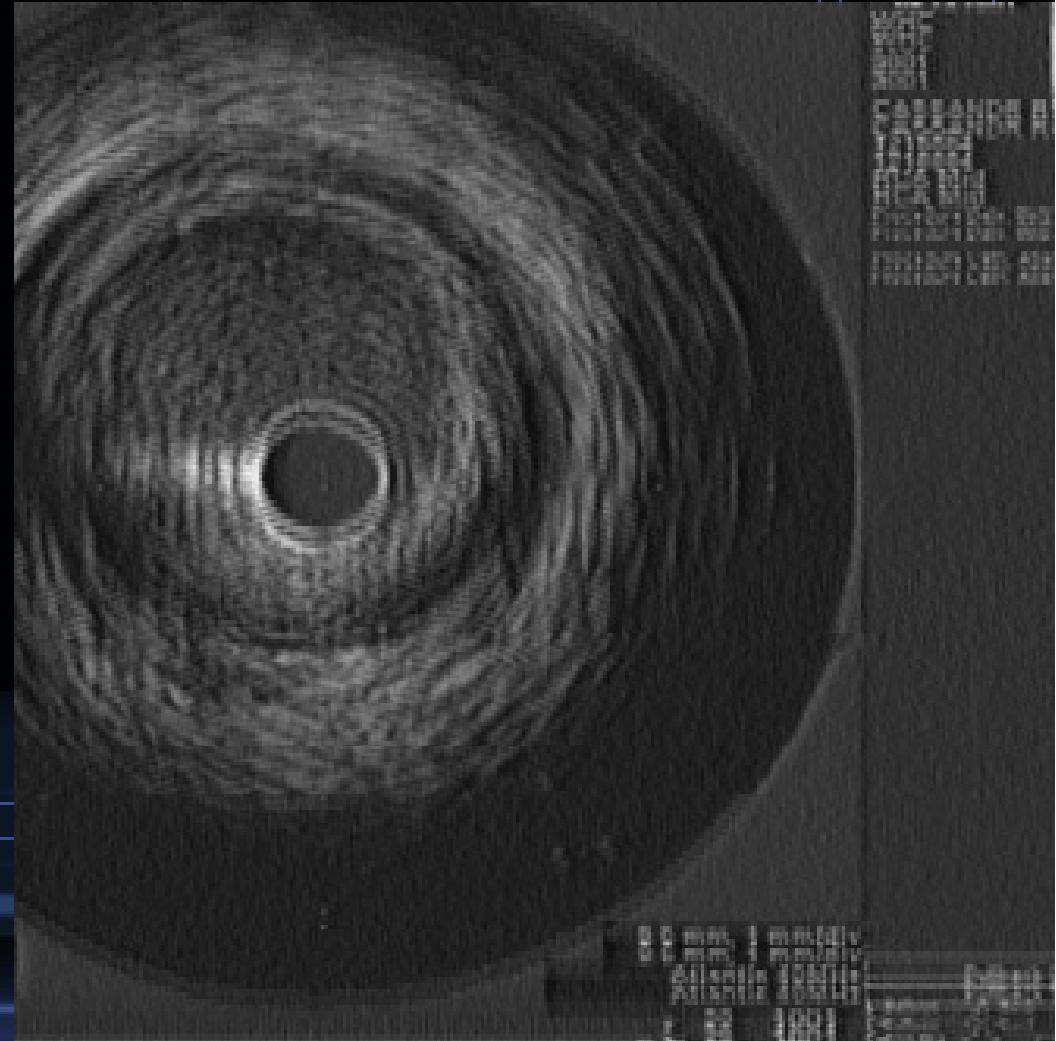
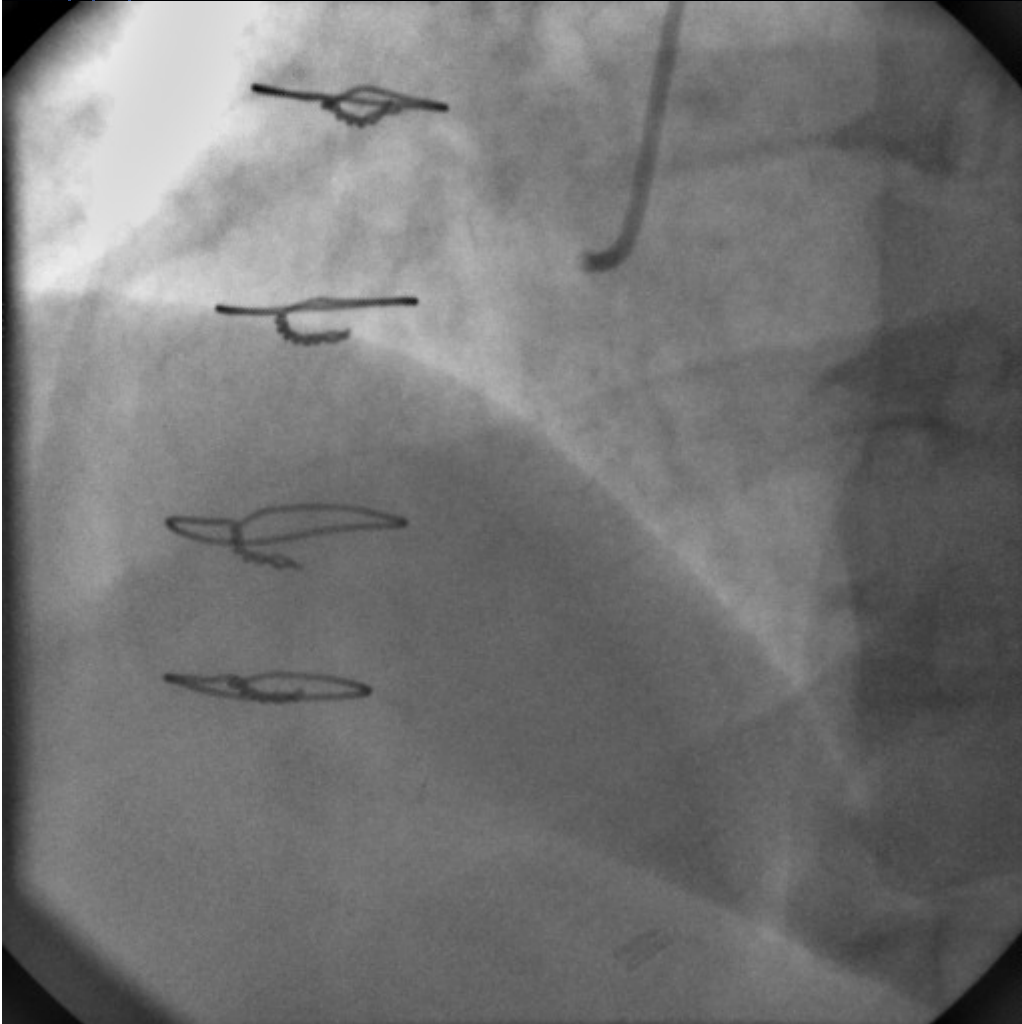
After
Stenting



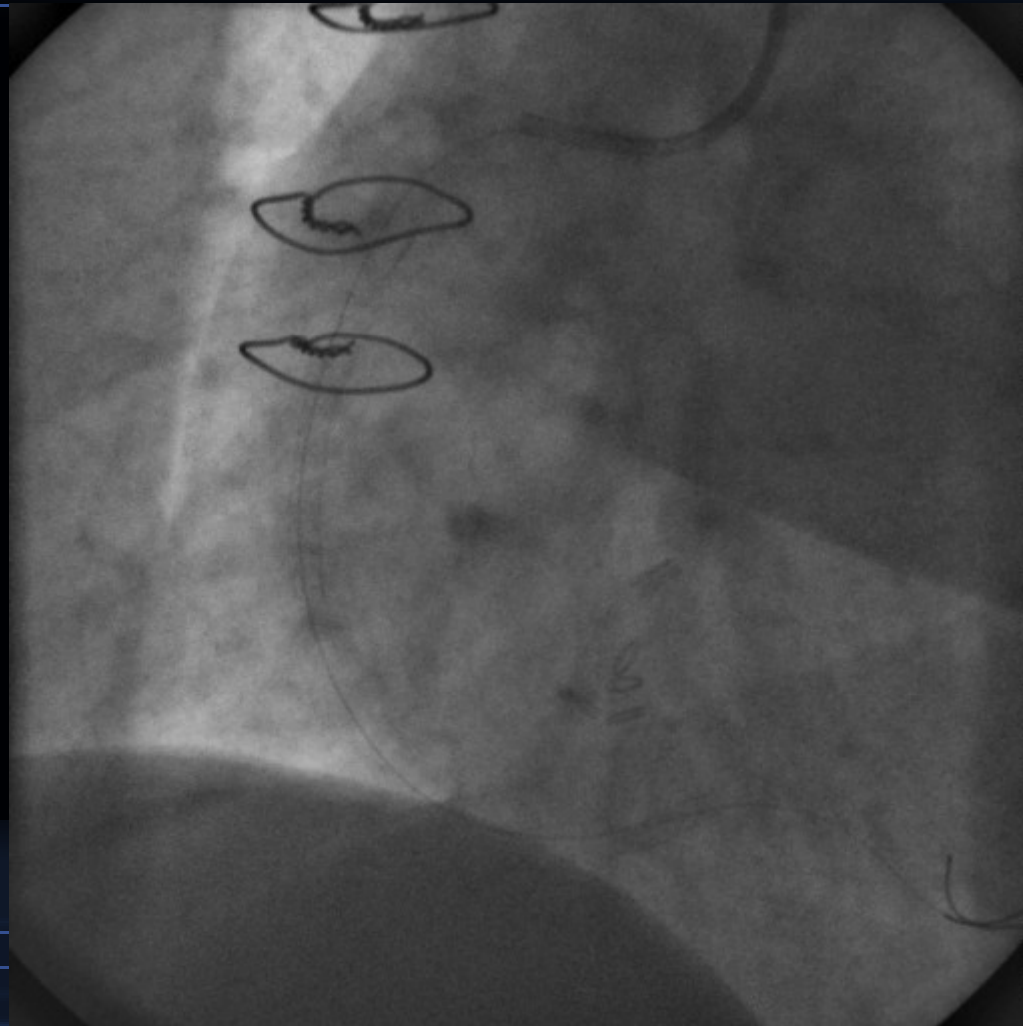
Extramural Hematoma

58Y/F Unstable Angina, PostCABG (1998), HT, DM, HL, CHF

Normal CK-MB, Tnl



3.5*33mm Cypher Stent for mRCA at 14 atm

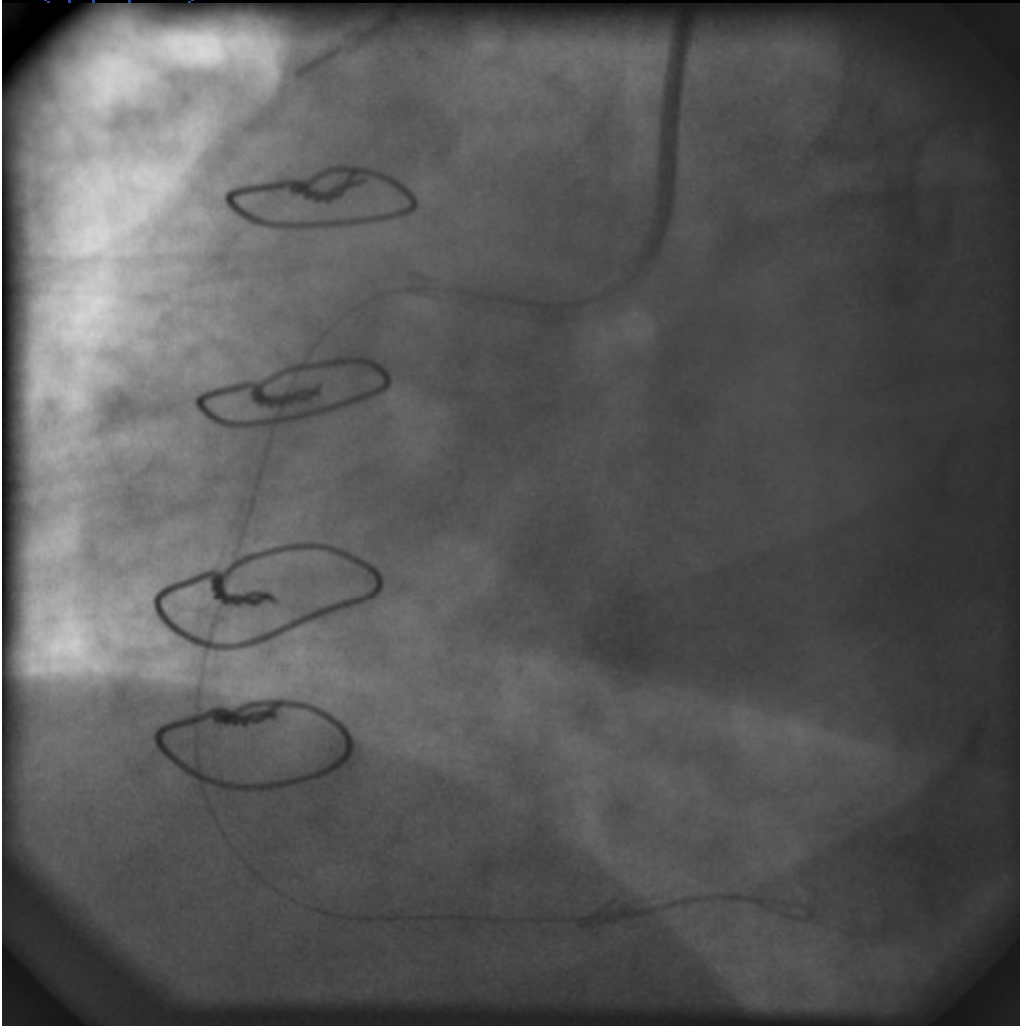


Bivalirudin

Clopidogrel 600 mg loading

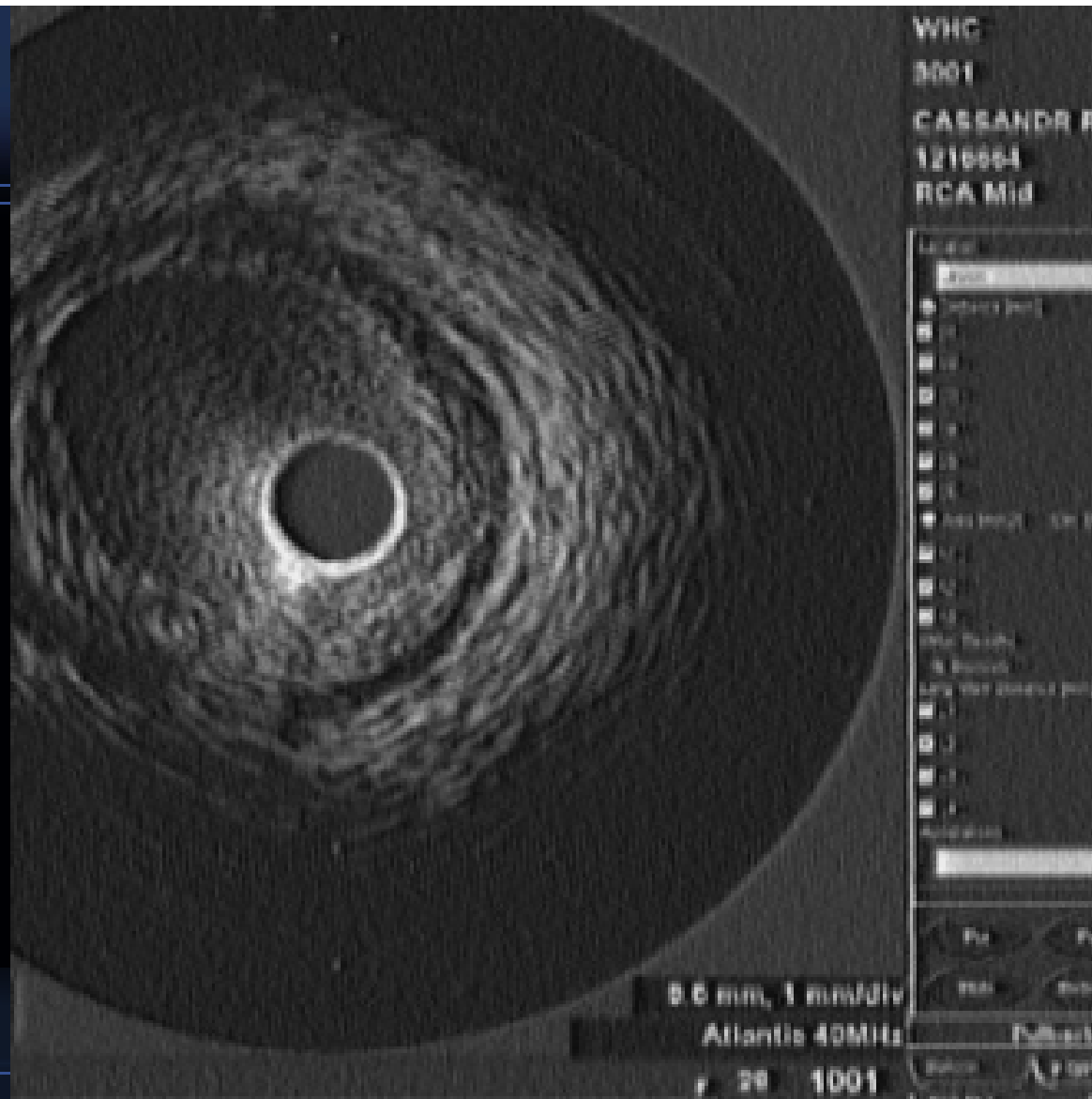
4 hours after Stenting, Chest Pain with ST elevation in II,III,aVF

CK-MB 25.9 ng/ml, Tnl 10.6 ng/ml



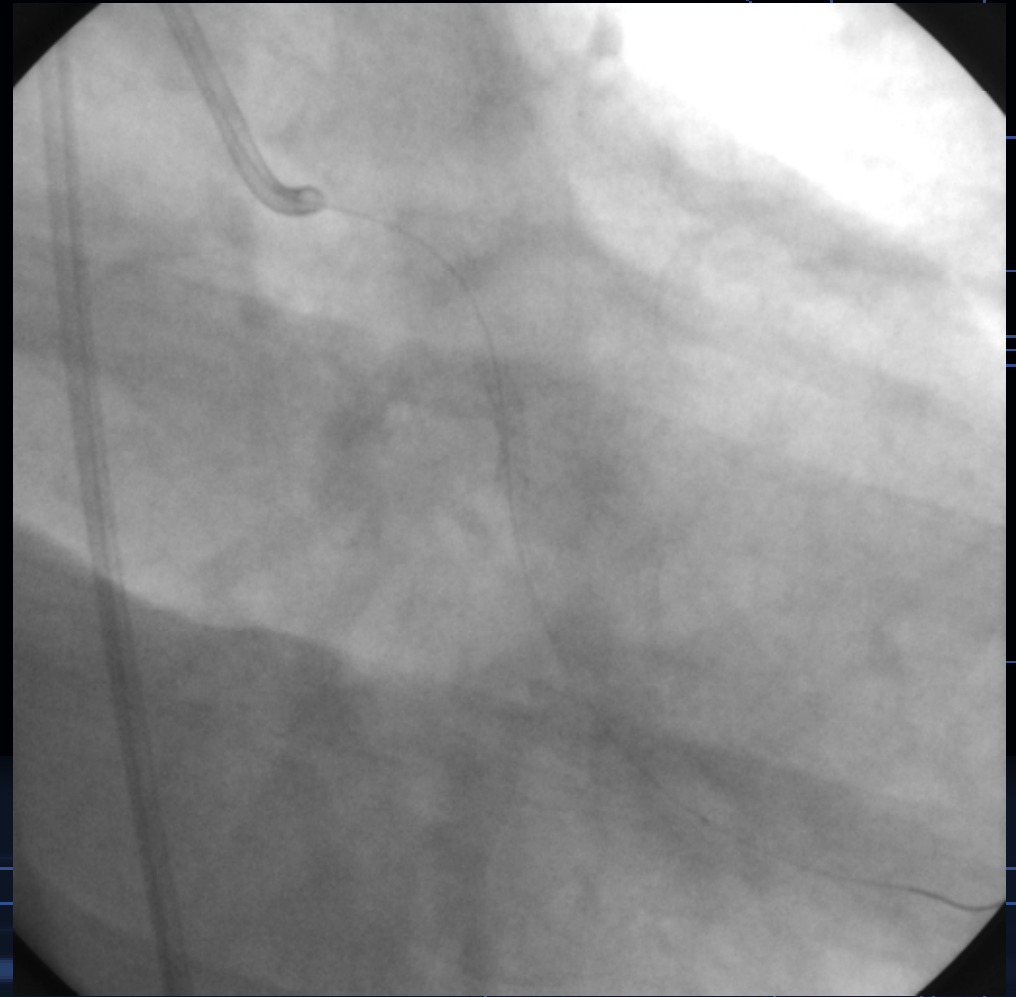
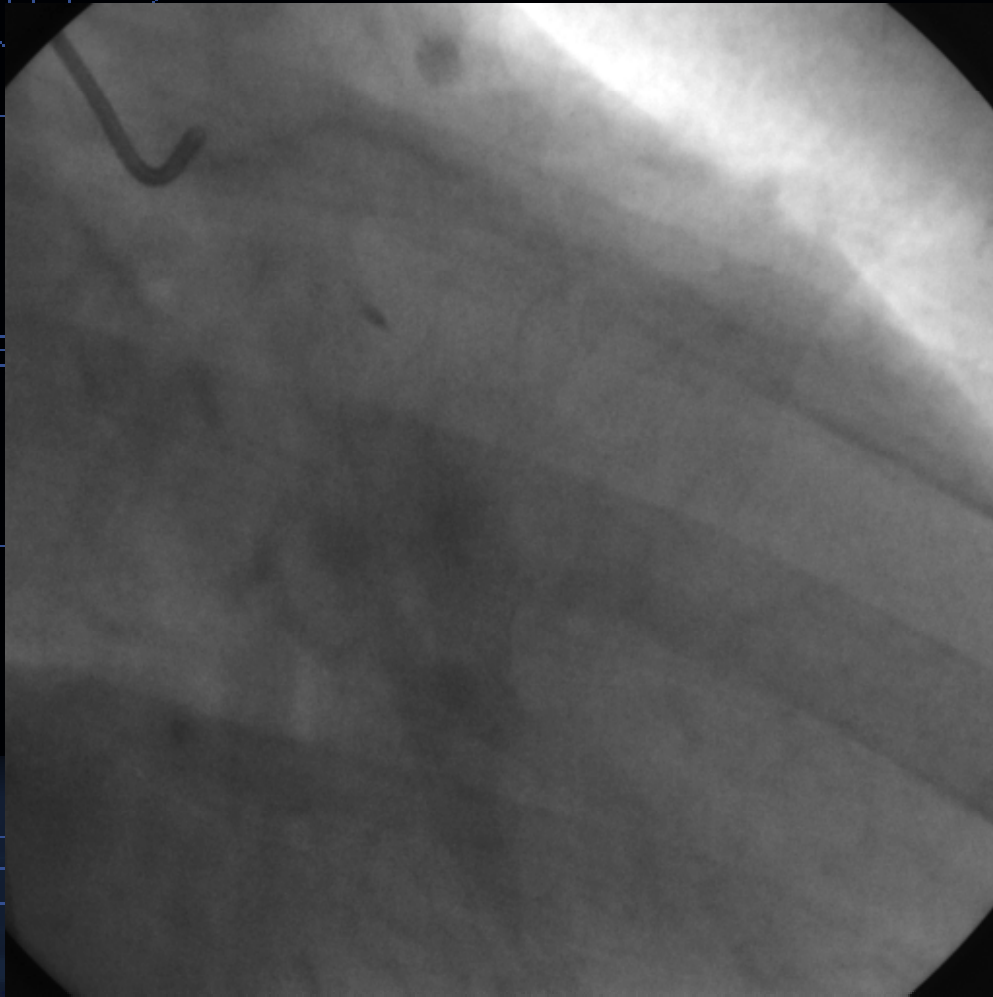
Acute Stent Thrombosis

**Justafter
PCI**



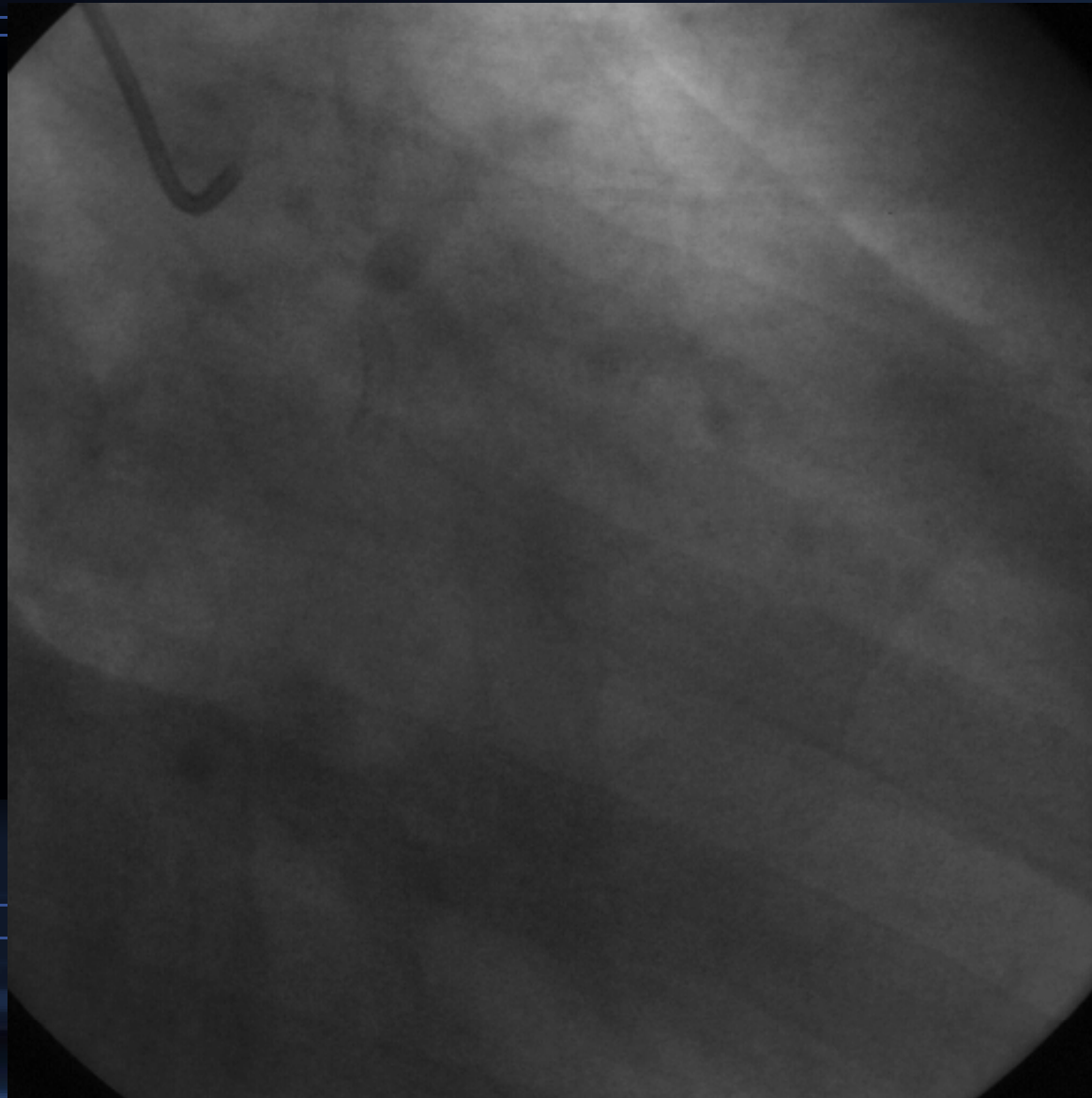
**Reference Segment Plaque Burden,
Distal Stent Edge Dissection, Tissue Prolapse**

51/M STEMI



3.0*19mm stent at 8 atm

STEMI (7 days after Stenting)

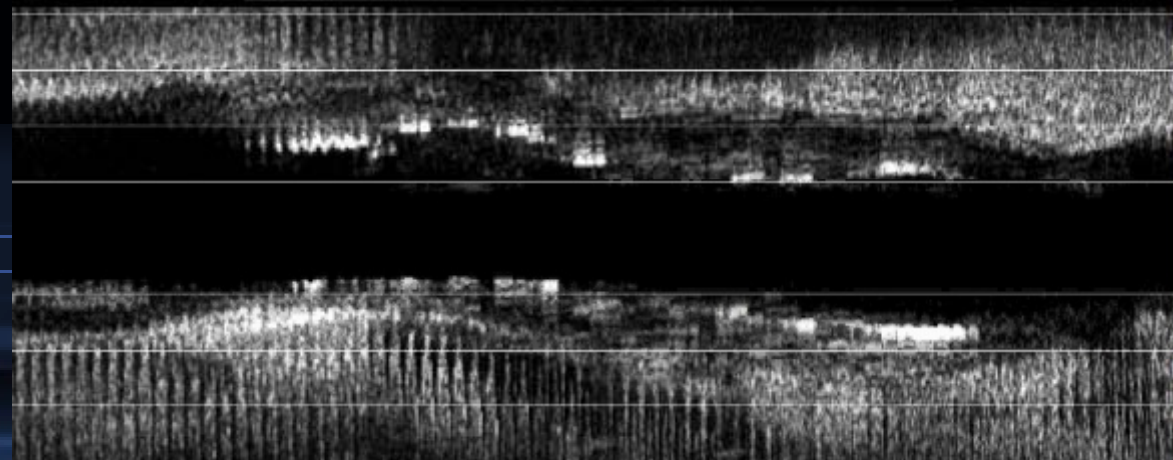
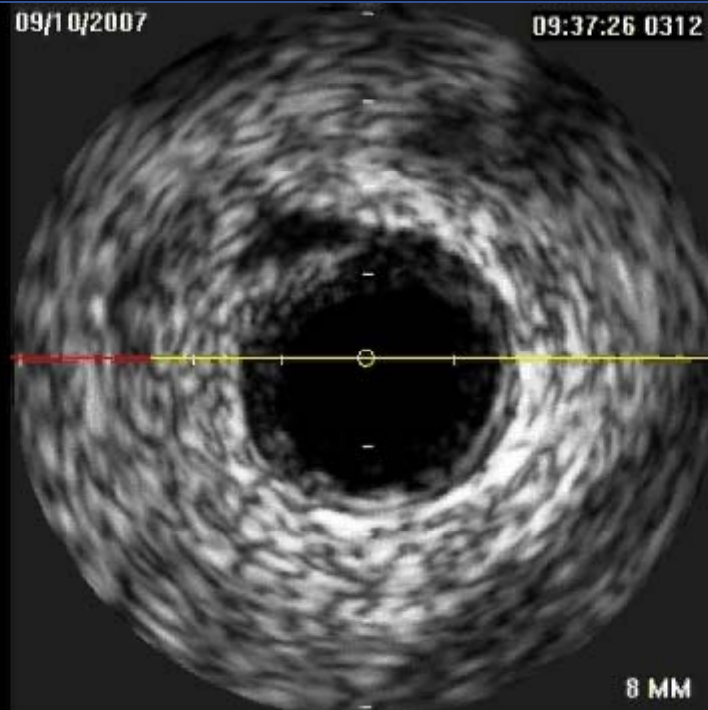


Subacute Stent Thrombosis

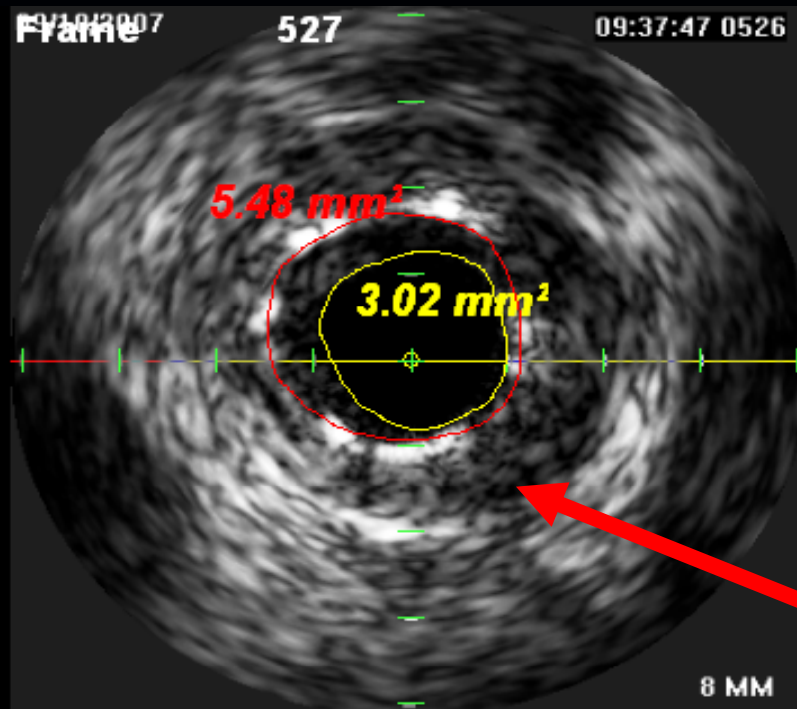
IVUS

09/10/2007

09:37:26 0312



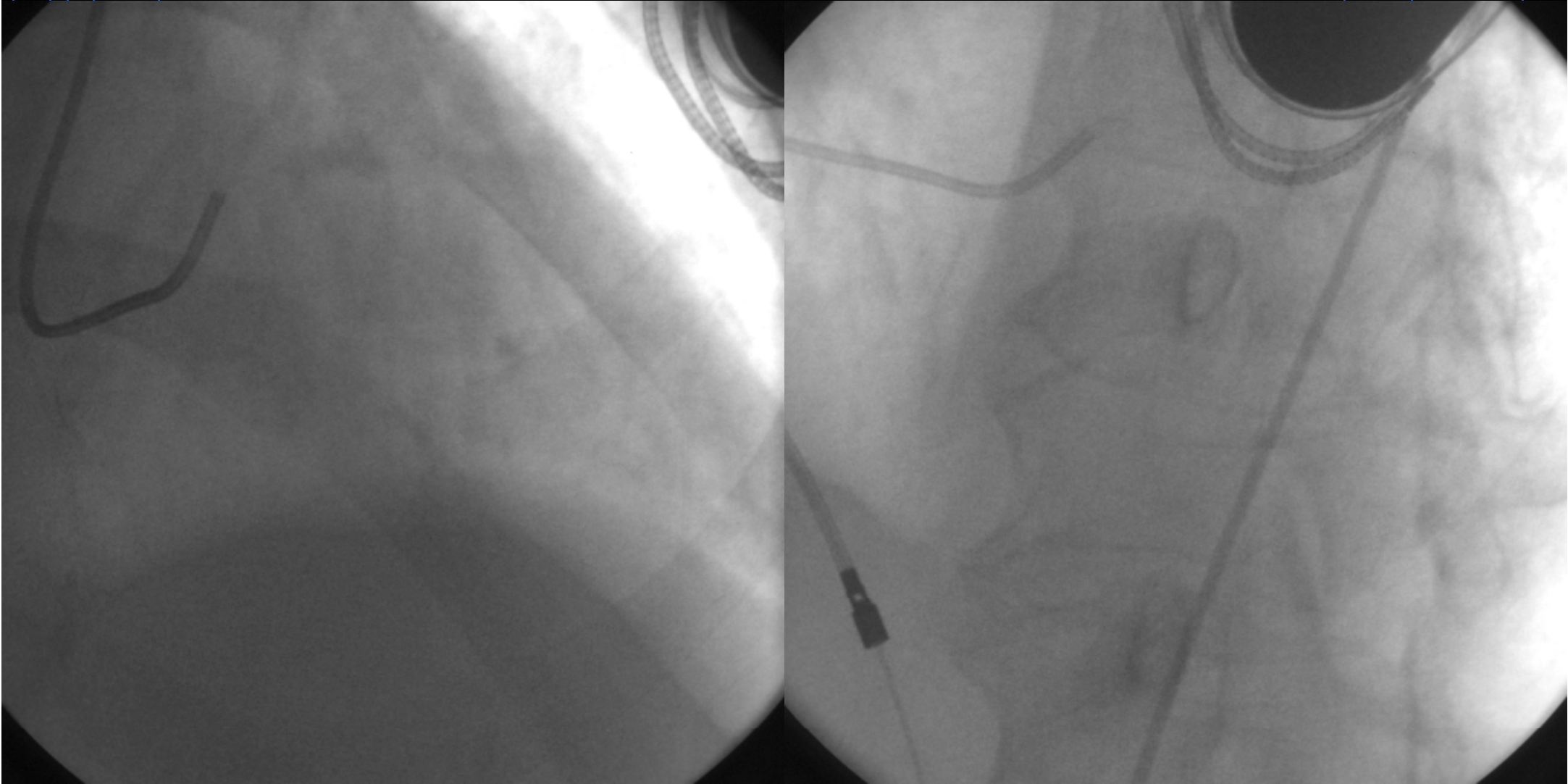
Minimum Stent Area Site



... Patient Gender: M
[-] Study
... Study Name: IVUS
... Study ID: 20070910-95213
... Study Date & Time: 2007-09-10 9:52:1
... Referring Physician:
[-] Series
... Series Number:0
... Series Date & Time: N/A
... Series:
... Modality: US
... Performing Physician: LCx-STENT
... Institute: C.N.U.HJMH
... Equipment: JOMED
... Acquisition Date & Time: N/A
... Manufacturers Model Name: IN-VISION
... Pullback rate: 0.50 mm/s
... Acquisition rate: 10.0 frames/s
... Loaded frames 327 through 986 steppir
... Key Frames
... 527

Reference Segment Plaque Burden, Stent Underexpansion

74/M UAP, HT, DM, ESRD (HD), s/p PPM (VDD)



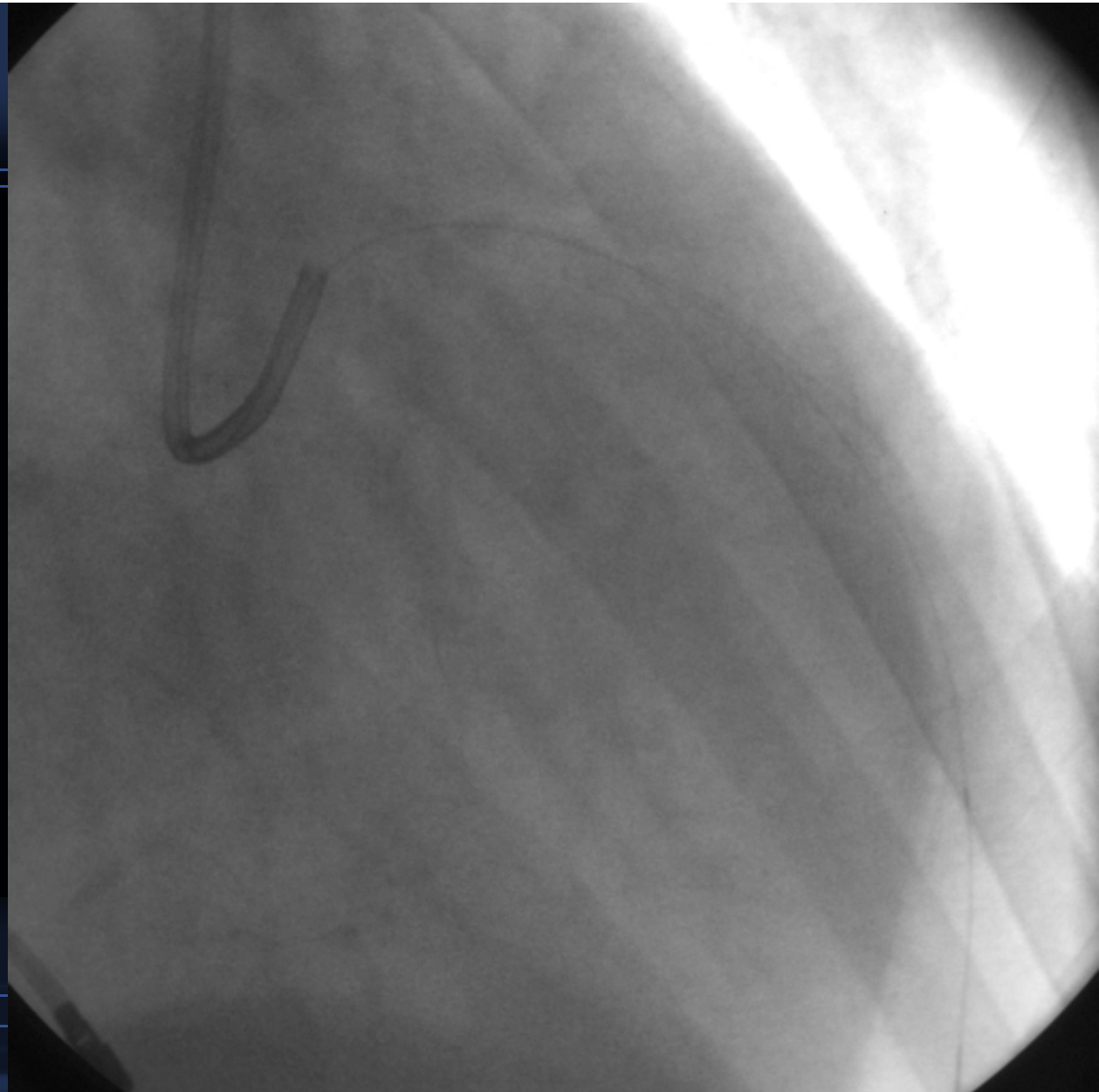
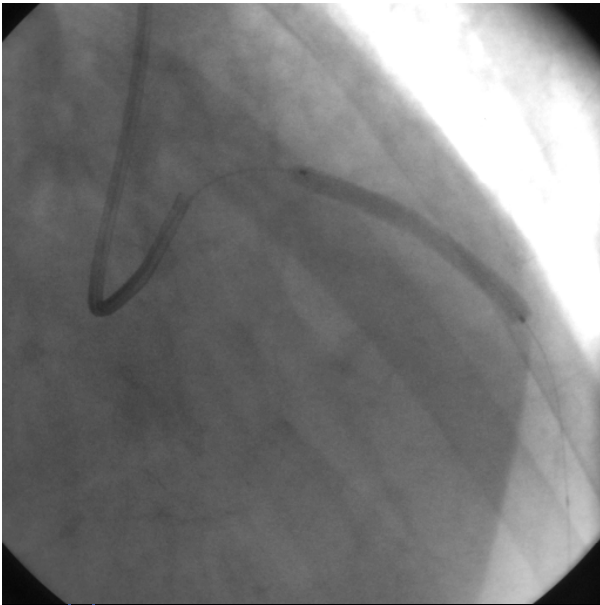
IVUS

08/09/2007

10:18:13 0402



8 MM

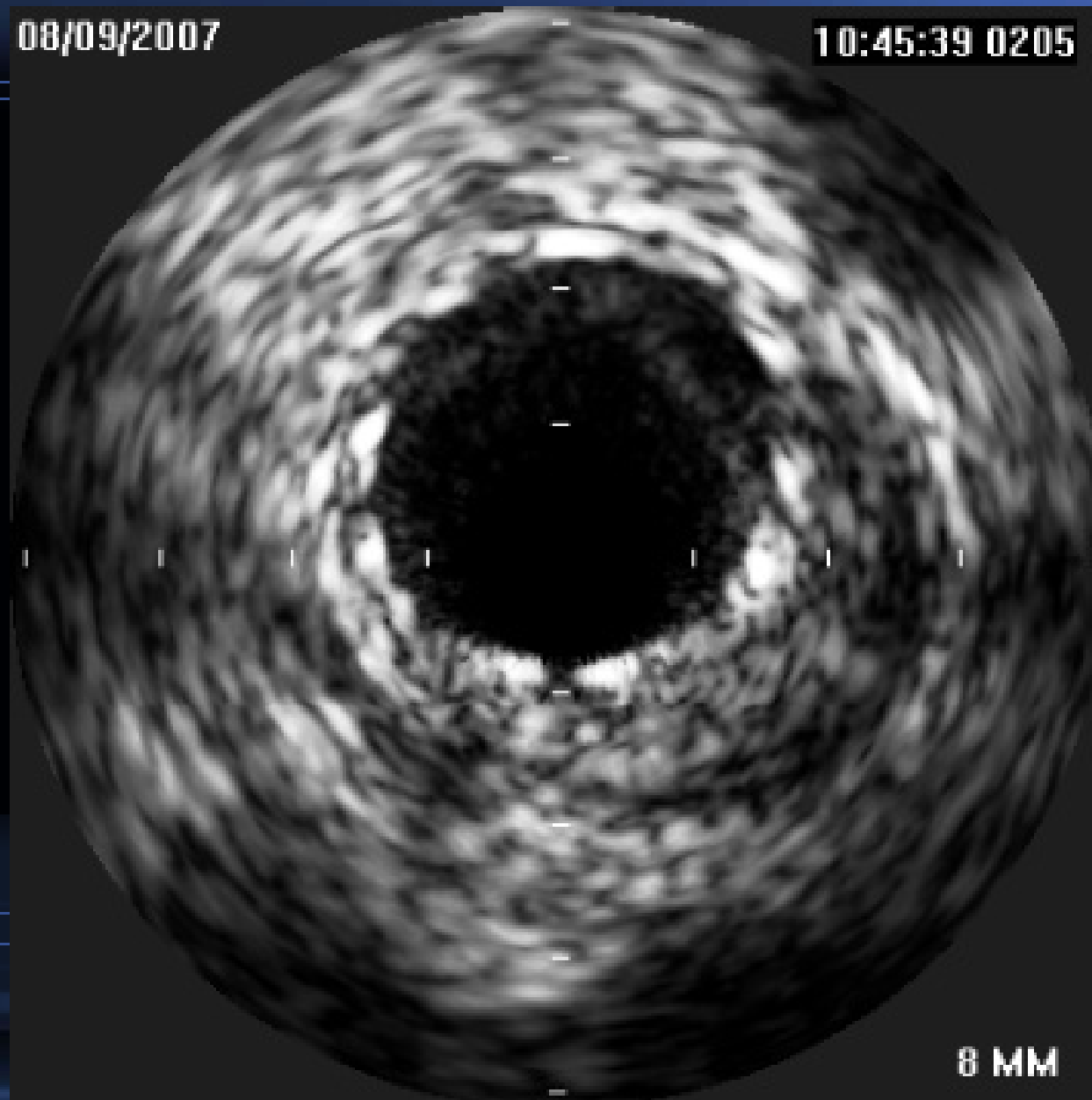


3.5*38mm stent for mLAD at 8atm

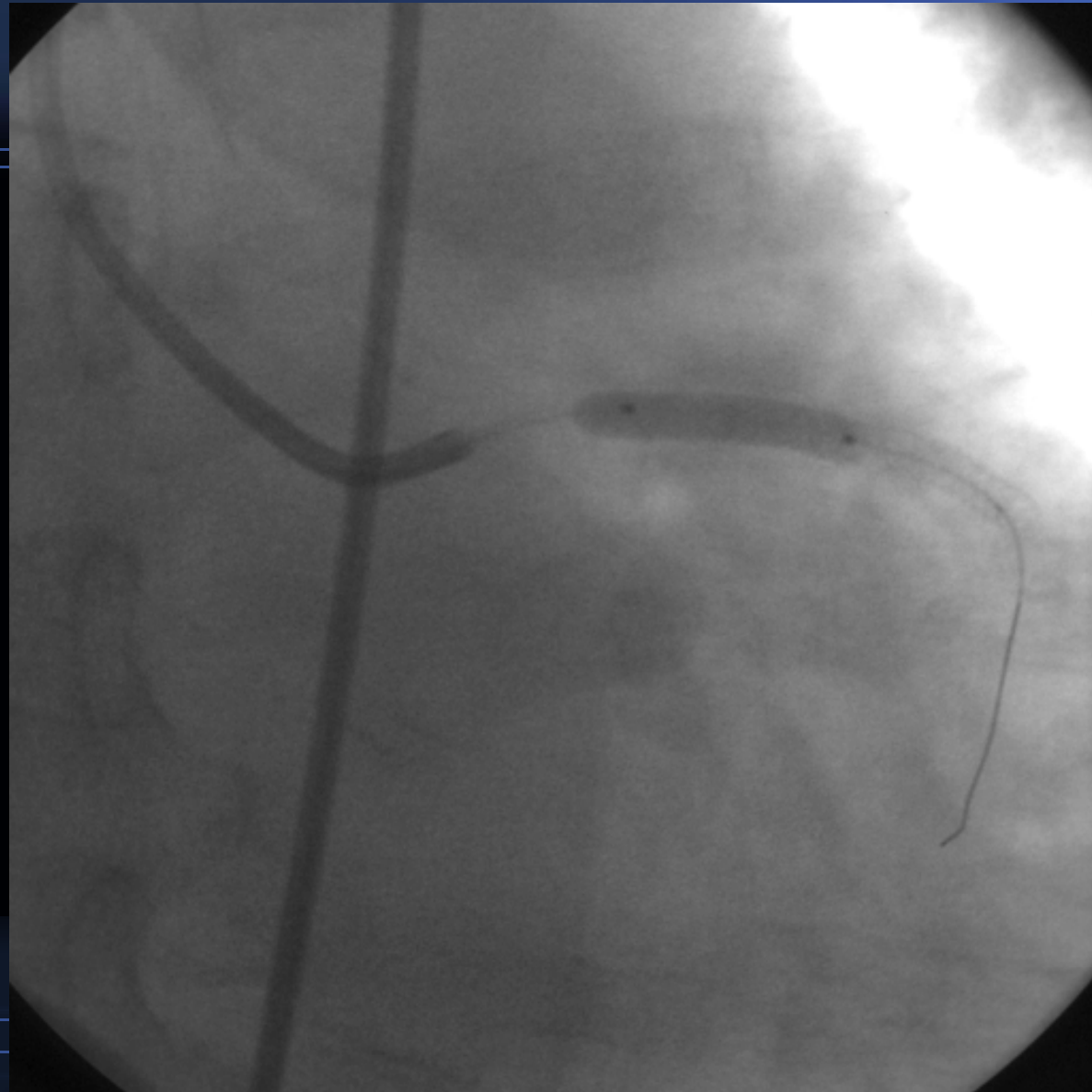
IVUS

08/09/2007

10:45:39 0205



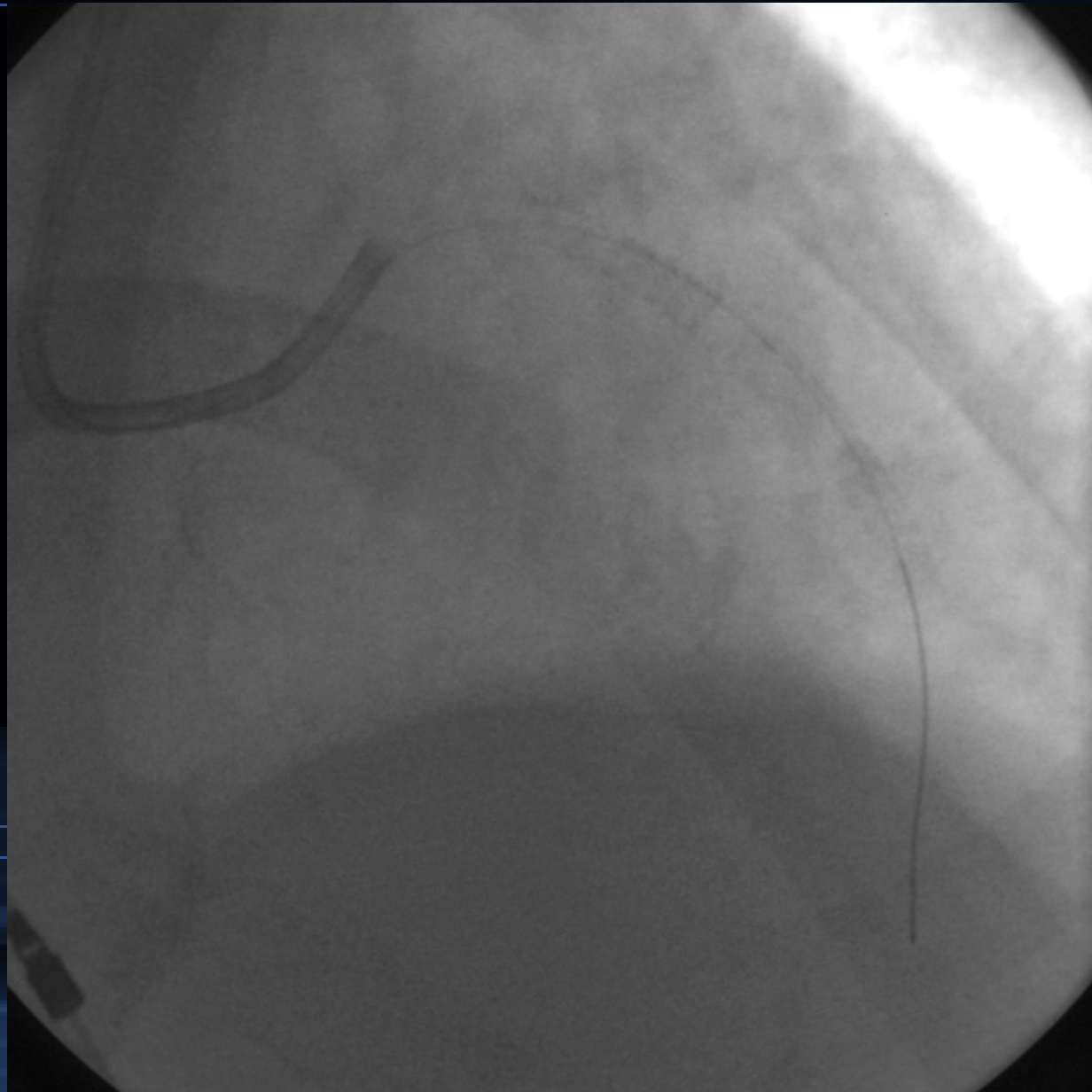
8 MM



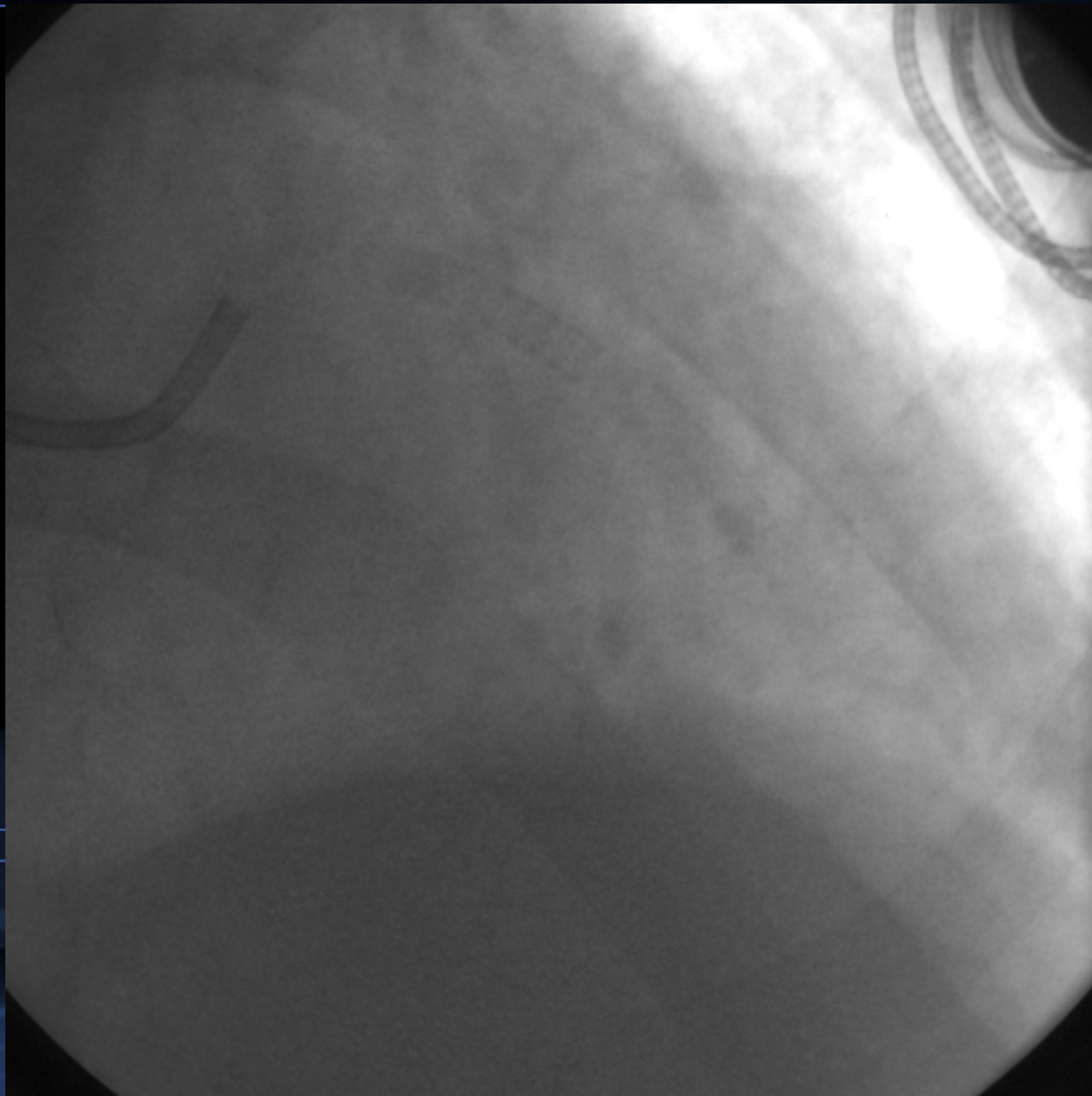
3.5*18mm Stent for pLAD at 14atm

After 3.5*18, 3.5*38mm Stent Implantation

No-reflow



ReoPro, Adenosin, Nicorandil

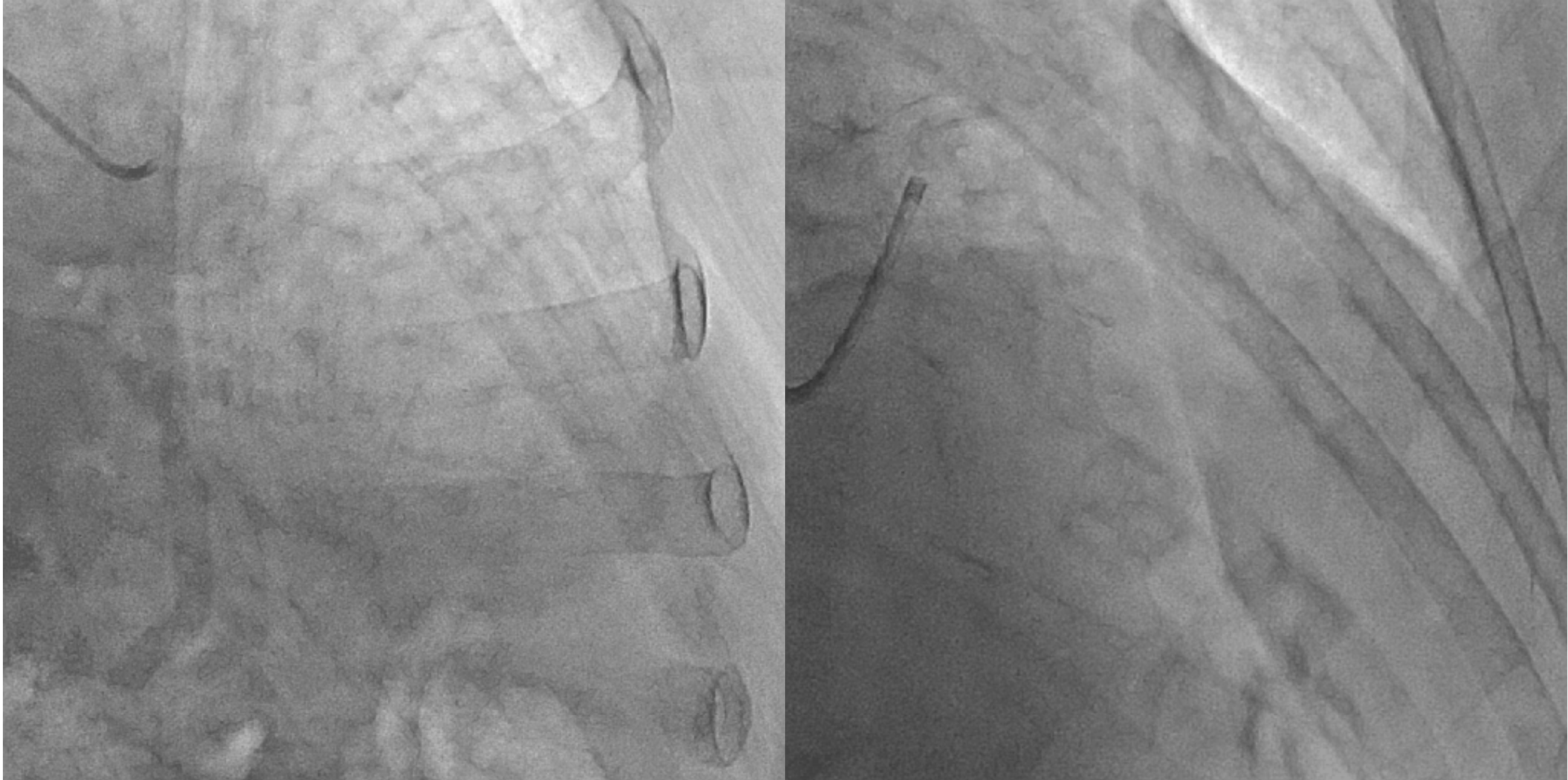


74/F Unstable Angina

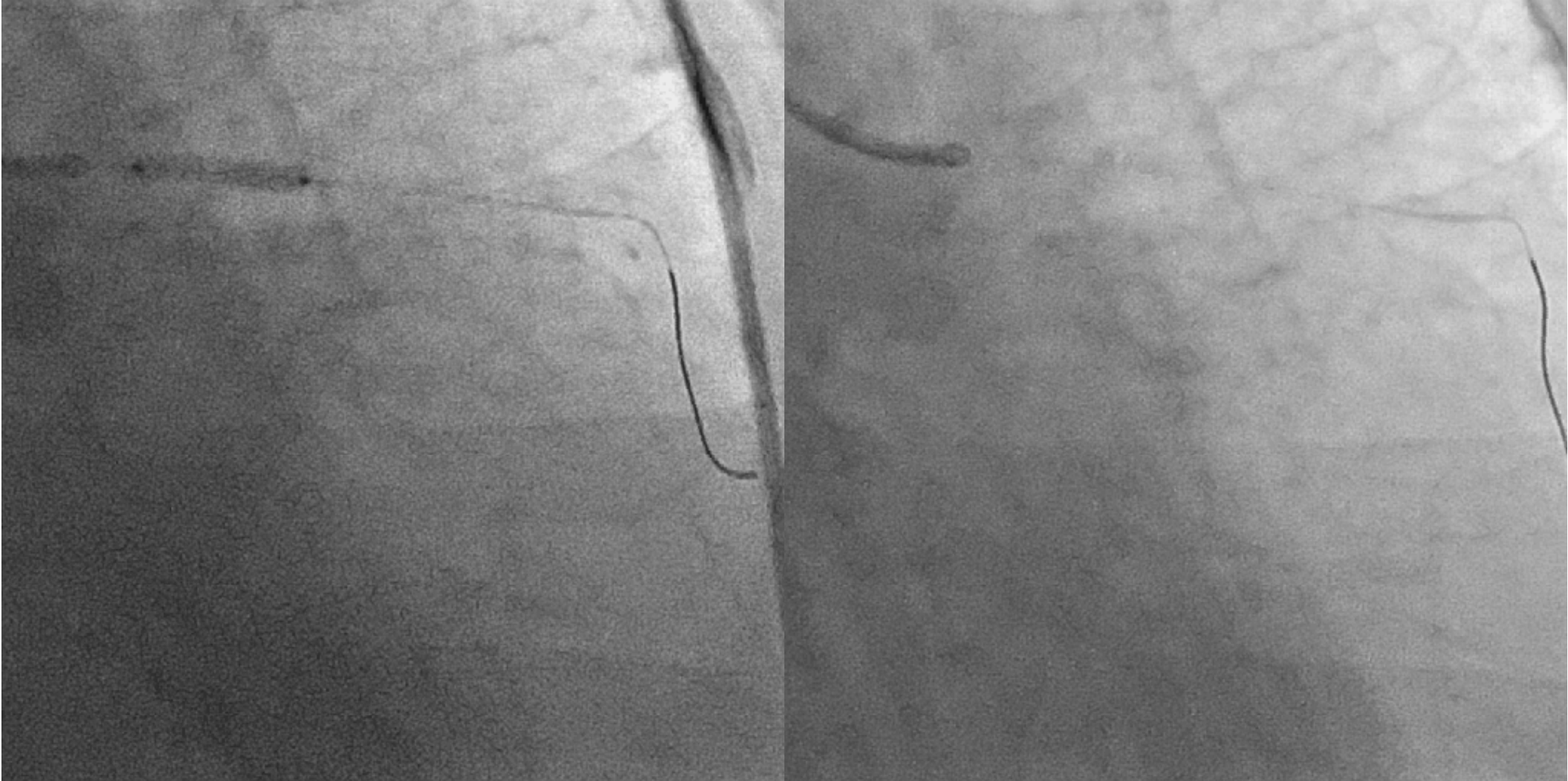
- **C.C: Chest pain**
- **Duration: 1 month**

- **VS: BP: 126/79 mmHg, PR: 66/min**

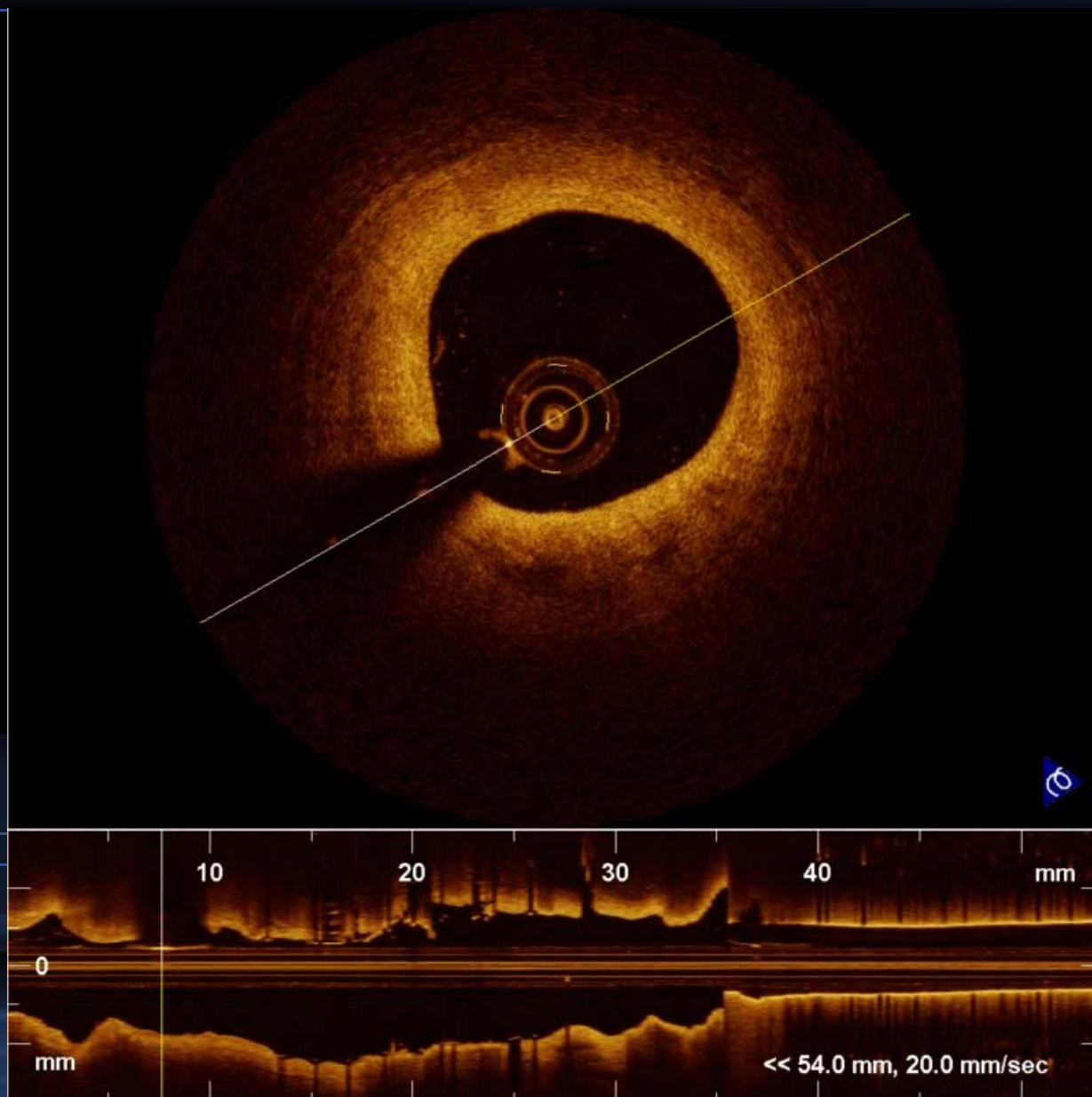
CAG

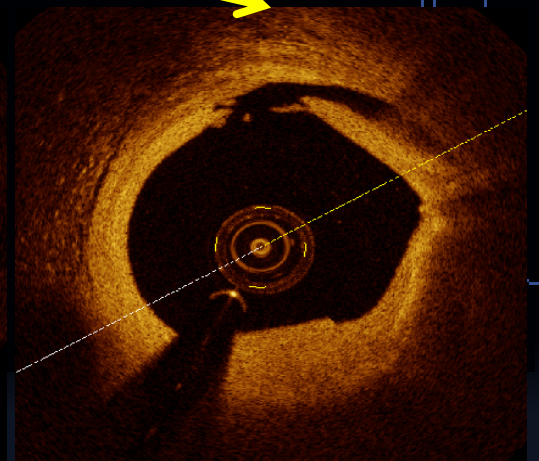
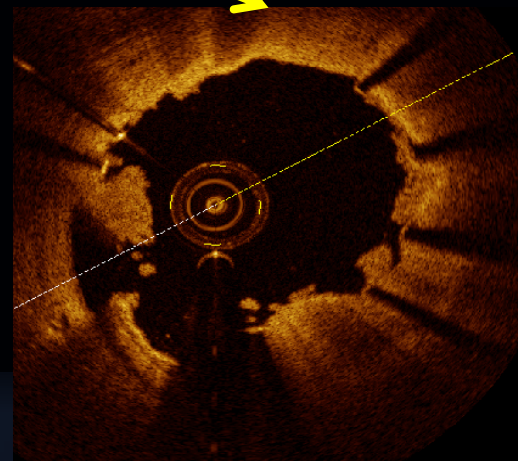
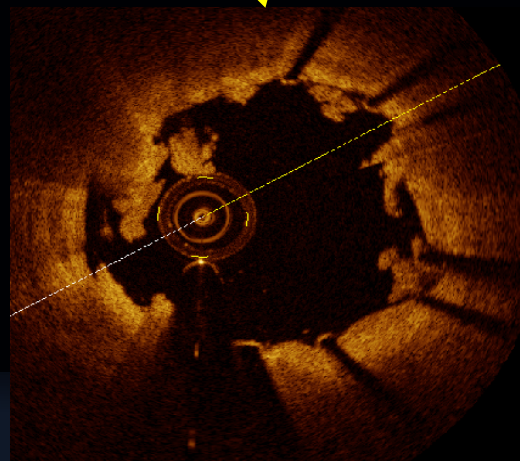
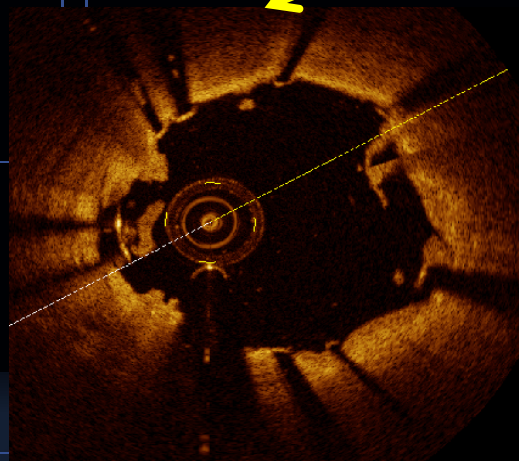
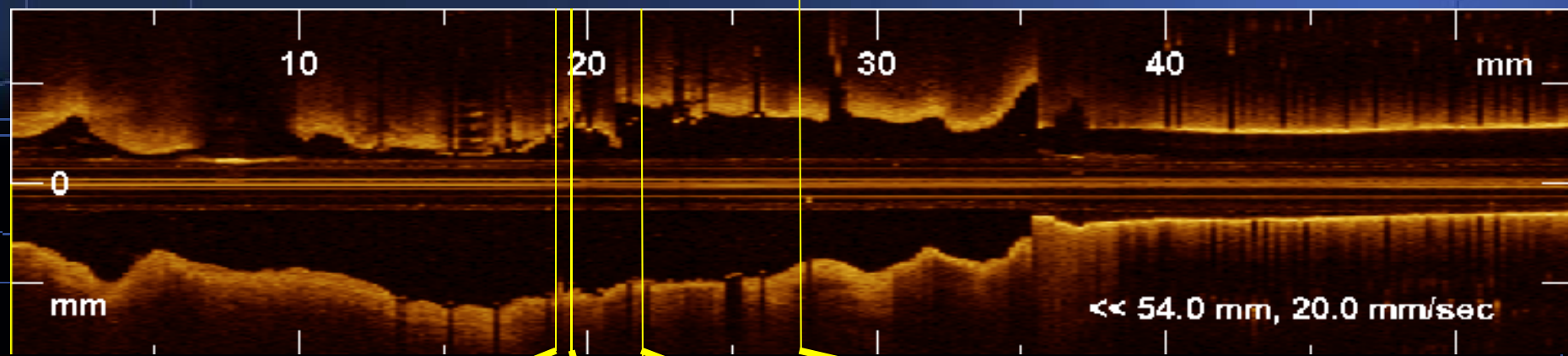


3.5*18mm Stent Implantation



OCT Finding



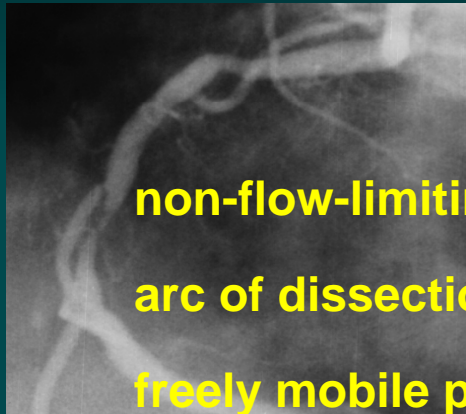


Thrombus and Proximal Edge Dissection

Post-stenting Complications

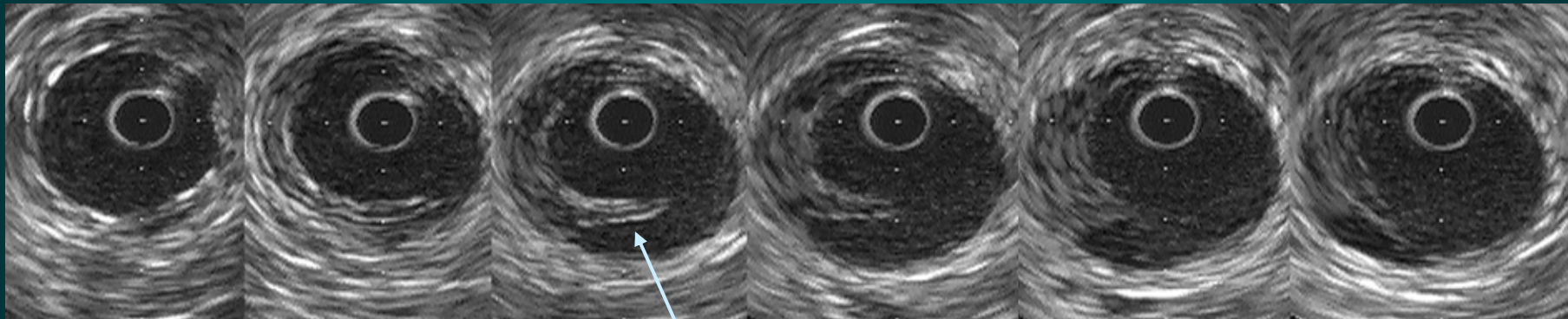
- **Dissection**
- **Intramural/Extramural hematomas**
- **Stent thrombosis/No-reflow**
- **Stent dislodgement**
- **Perforation**

Minor Stent Edge Dissection



non-flow-limiting or no lumen compromise
arc of dissection <90 degrees

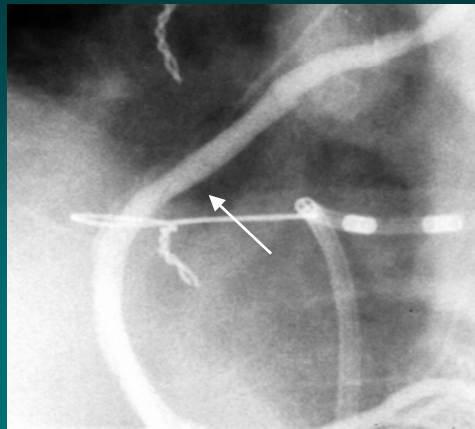
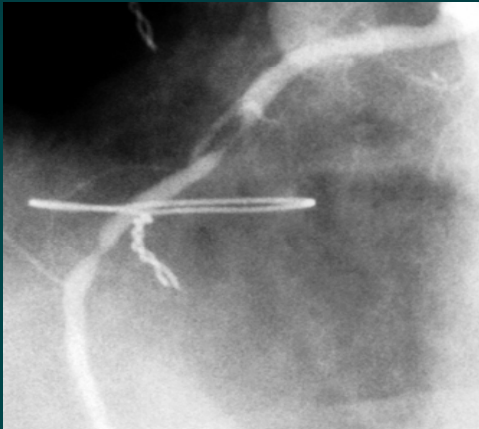
freely mobile plaque protruding into the lumen,
but not directed toward the center of the lumen



0 → 1.5mm → 7.5mm

Dissection

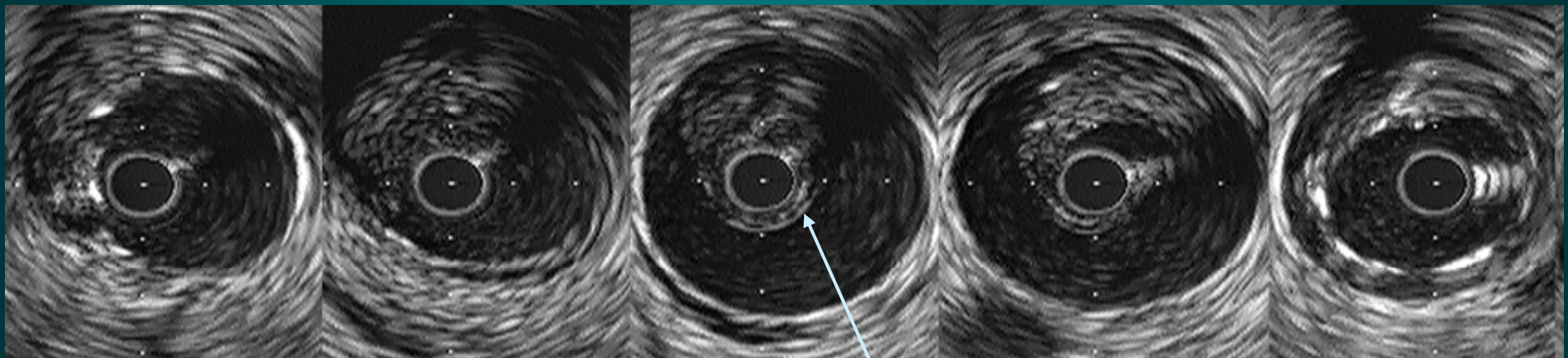
Major Stent Edge Dissection



a mobile flap

arc of dissection > 90 degrees

flow-limiting or lumen compromise



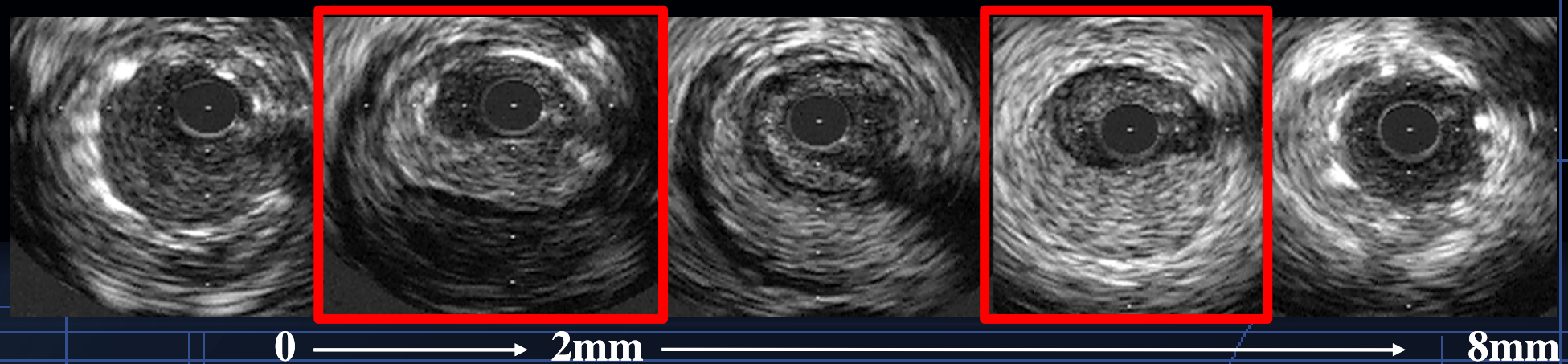
Dissection

Intramural and Extramural Hematomas

The EEM expands outward and the internal elastic membrane or intima is pushed inward and straightened to cause lumen compromise.

Blood accumulates in the space caused by the split in the media.

Extramural hematoma displaced the media and EEM inward.
a new, peri-adventitial echolucent interface.



No-Reflow Phenomenon and Lesion Morphology in Patients With Acute Myocardial Infarction

	No-Reflow Group (n=13)	Reflow Group (n=87)	<i>P</i>
IVUS images			
Eccentric	12 (92)	44 (51)	<0.01
Fissure/dissection	12 (92)	32 (37)	<0.01
Lipid pool-like image	12 (92)	22 (25)	<0.01
Superficial calcium	3 (23)	38 (44)	0.23
Deep wall calcium	3 (23)	33 (38)	0.37
Positive remodeling	4 (31)	17 (20)	0.46
Distal reference EEM-CSA, mm ²	17.1 ± 6.4	12.7 ± 4.3	<0.01
Distal reference plaque area, mm ²	9.3 ± 4.5	6.2 ± 2.5	<0.01
Lesion EEM-CSA, mm ²	18.4 ± 4.3	13.3 ± 4.1	<0.01
Lesion lumen CSA, mm ²	2.2 ± 1.4	2.3 ± 1.4	0.93
Proximal reference EEM-CSA, mm ²	20.8 ± 4.1	15.2 ± 4.4	<0.01
Proximal reference plaque area, mm ²	10.0 ± 2.9	7.3 ± 2.7	<0.01



ELSEVIER

ORIGINAL ARTICLE

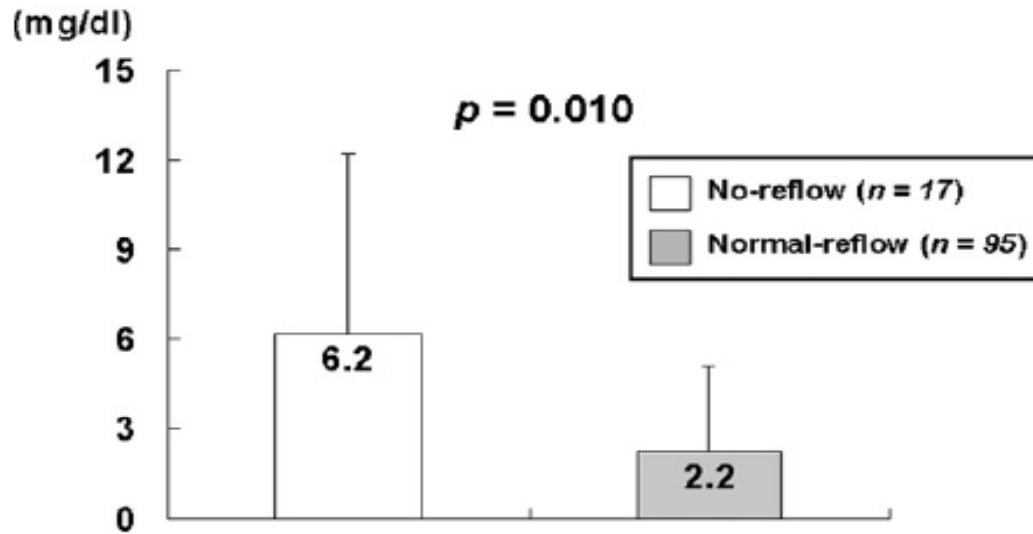
JOURNAL of
CARDIOLOGY

Official Journal of the Japanese College of Cardiology

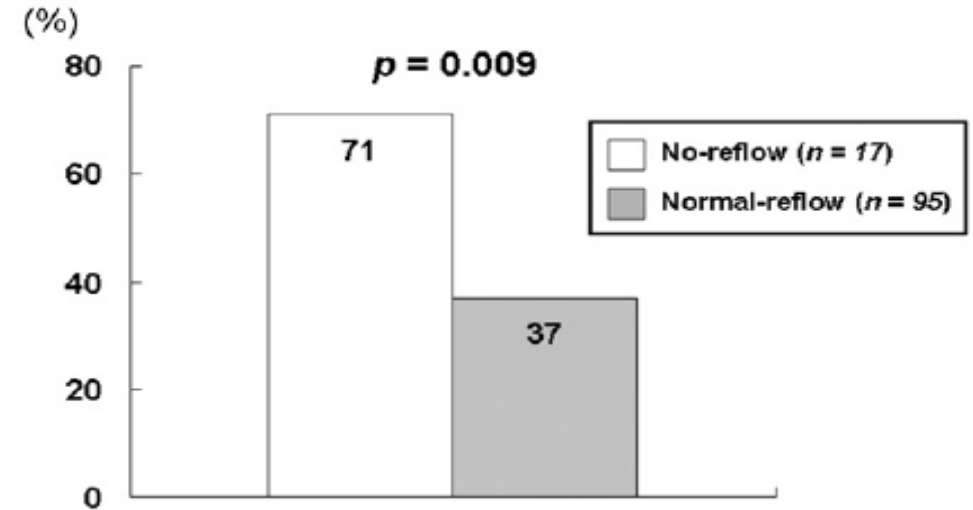
www.elsevier.com/locate/jjcc

Predictors of no-reflow after percutaneous coronary intervention for culprit lesion with plaque rupture in infarct-related artery in patients with acute myocardial infarction

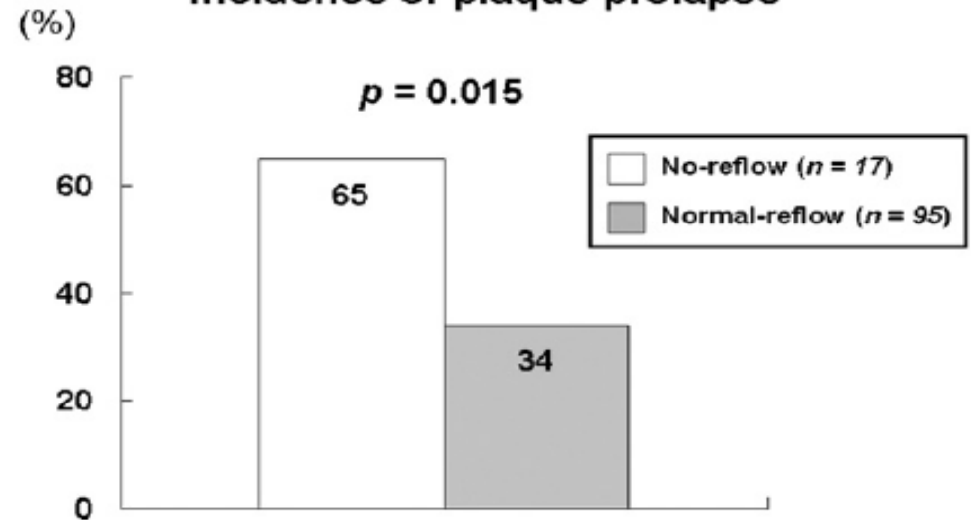
High-sensitivity C-reactive protein



Incidence of multiple plaque ruptures



Incidence of plaque prolapse



Plaque Component and No-Reflow

