

Simultaneous No-reflow Phenomenon and Abrupt Vessel Closure After Rotational Atherectomy Result in Cardiac Arrest

Wongwaris Aphijrawat, MD

Queen Sirikit Naval Hospital, Thailand

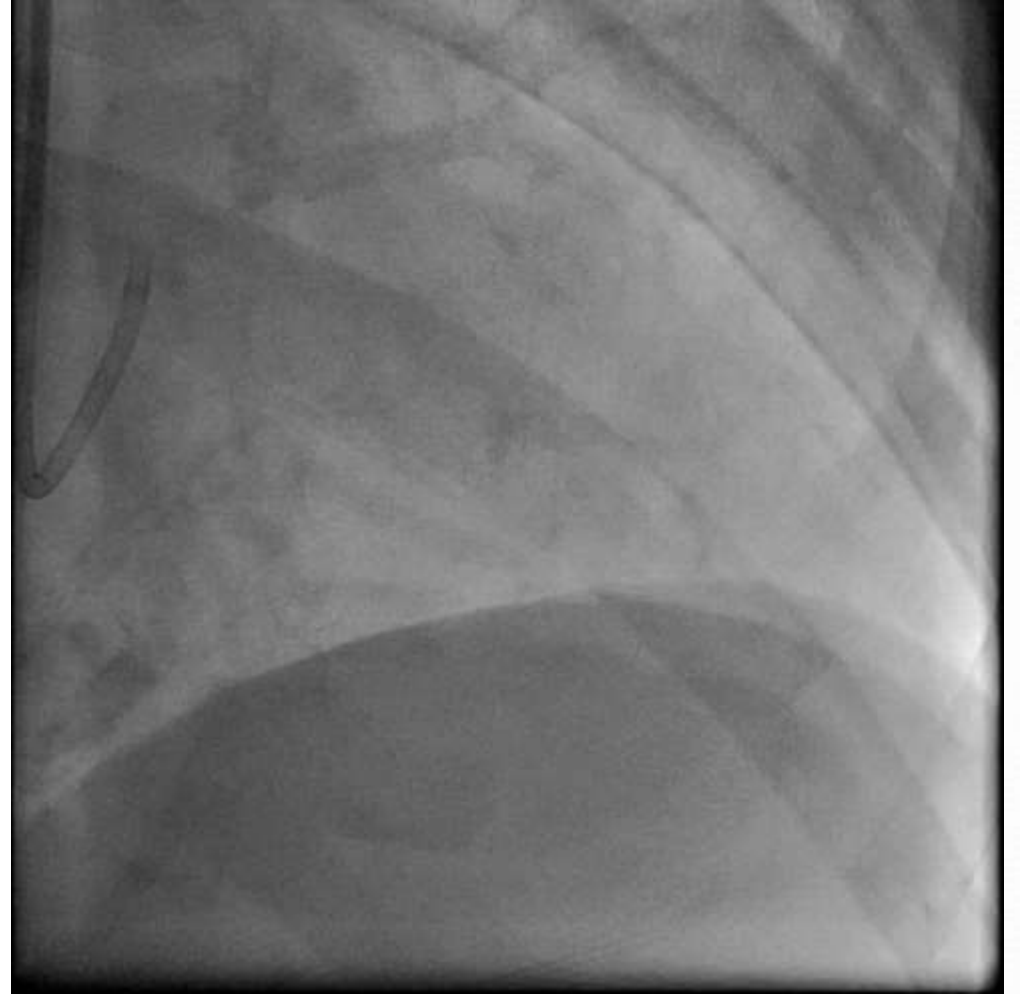
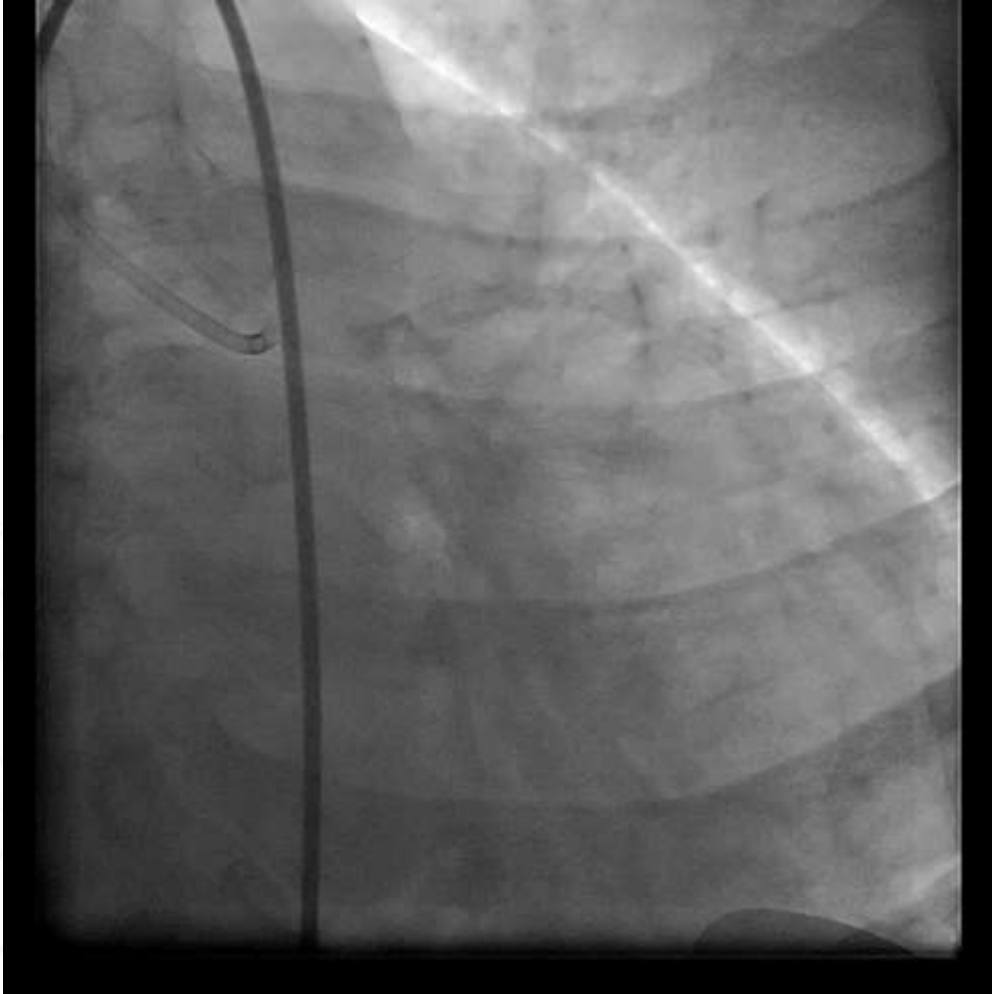
Disclosure

- None

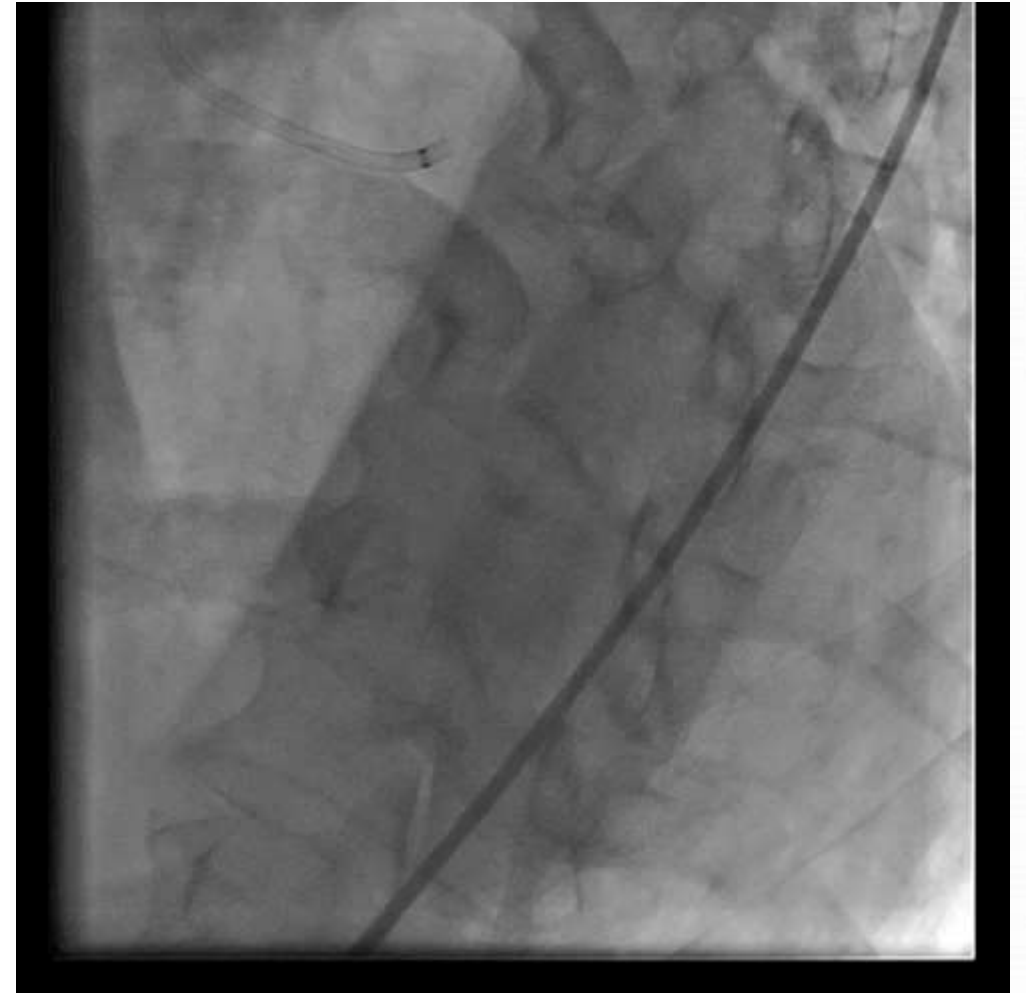
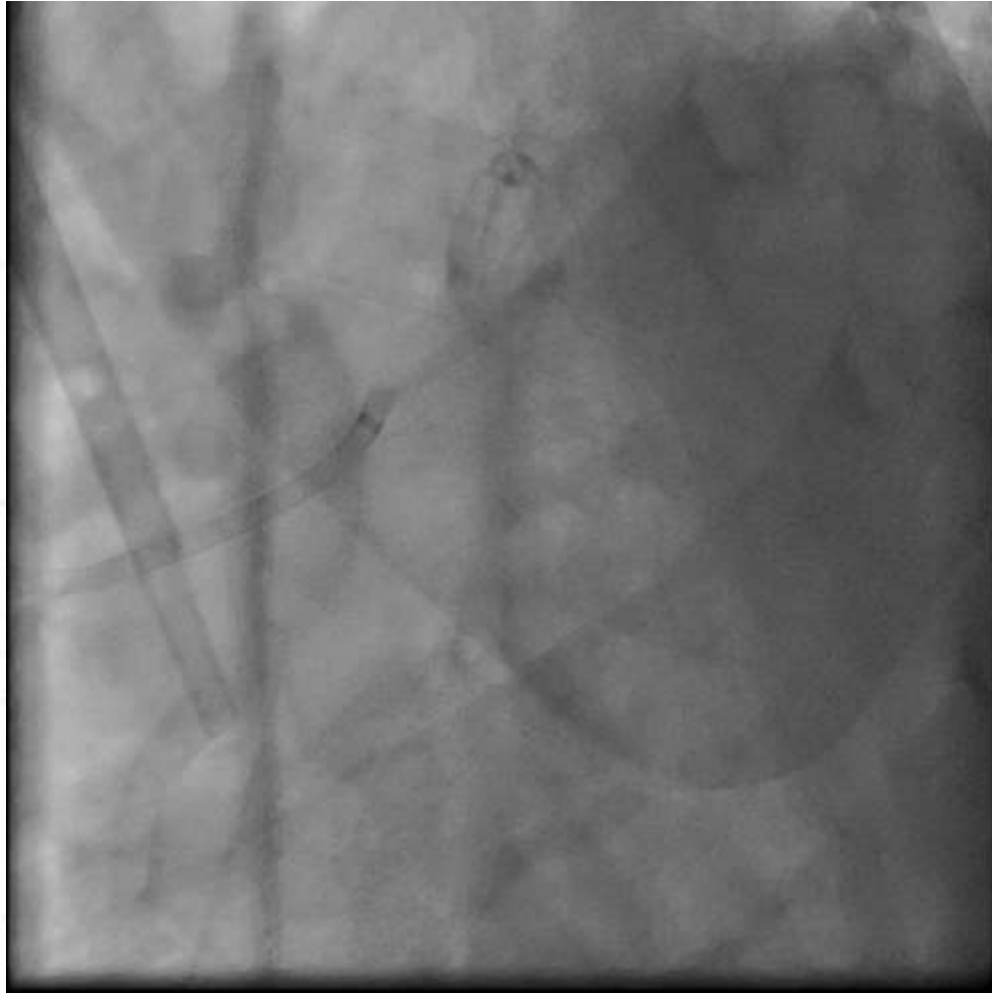
Case Profile

- Case 60 years old man with a history of HT, DLP, ESRD on Regular H/D
- CC : Chest pain 10 hours PTA
- PI : 10 hours PTA Patient reported substernal chest pain during hemodialysis at the last hour of session and the pain persisted for 40-45 mins. He also reported dyspnea and palpitation.
- Lab : hsTnT 73 -> 210
- Echocardiogram bed side :
 - Borderline LV systolic function, LVEF 50-55% with anterior wall hypokinesia.
 - No significant valvular pathology.
- Dx : NSTEMI (High risk)
- Sent for CAG

Angiogram



Angiogram



RCA – Calcified, non-significant stenosis

Strategy

- Target lesion – LAD and Lcx
- 7F Guiding catheter
- IVUS – Assess the lesion/Calcified/vessel diameter
- Lesion modification – Rotablator 1.5/1.75/2.0 burr
- Stenting mid LAD first, then Rota to Lcx
- Plan 2-Stenting at LM-LAD-Lcx if necessary

IVUS LAD



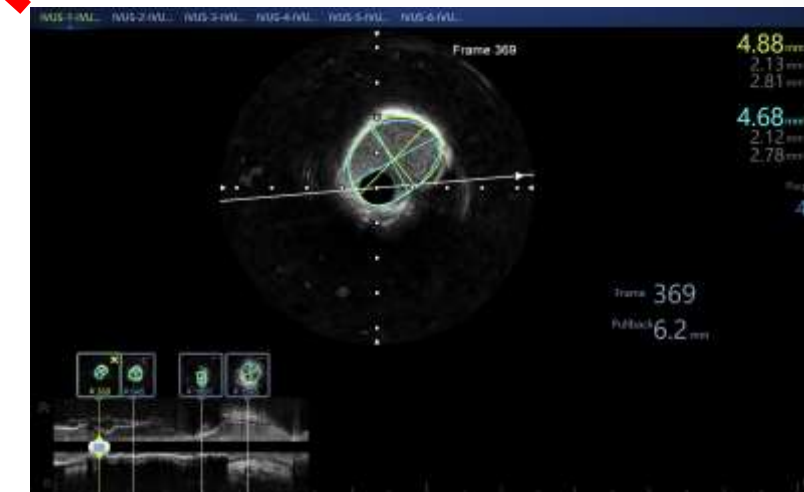
Circumferential calcification along the vessel
Significant Left main disease

Distal LM MLA - 4.7 mm²

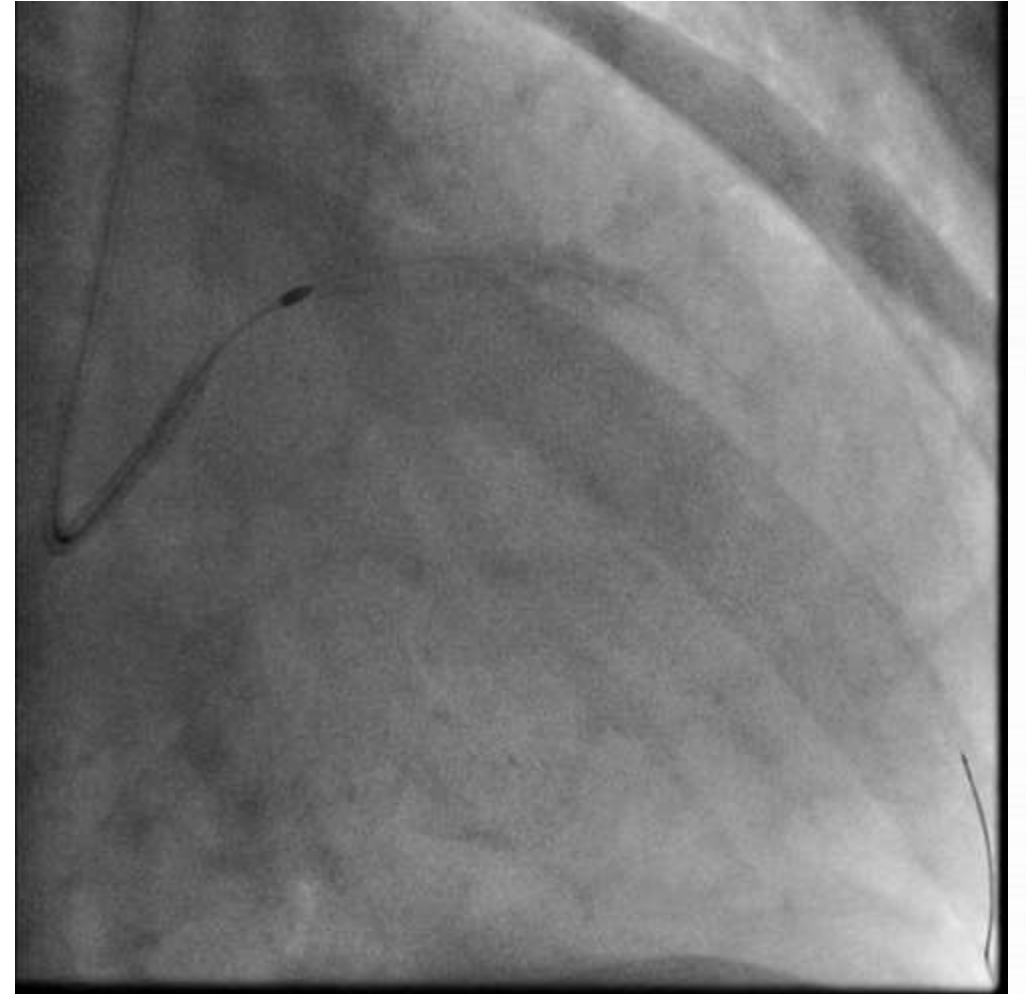
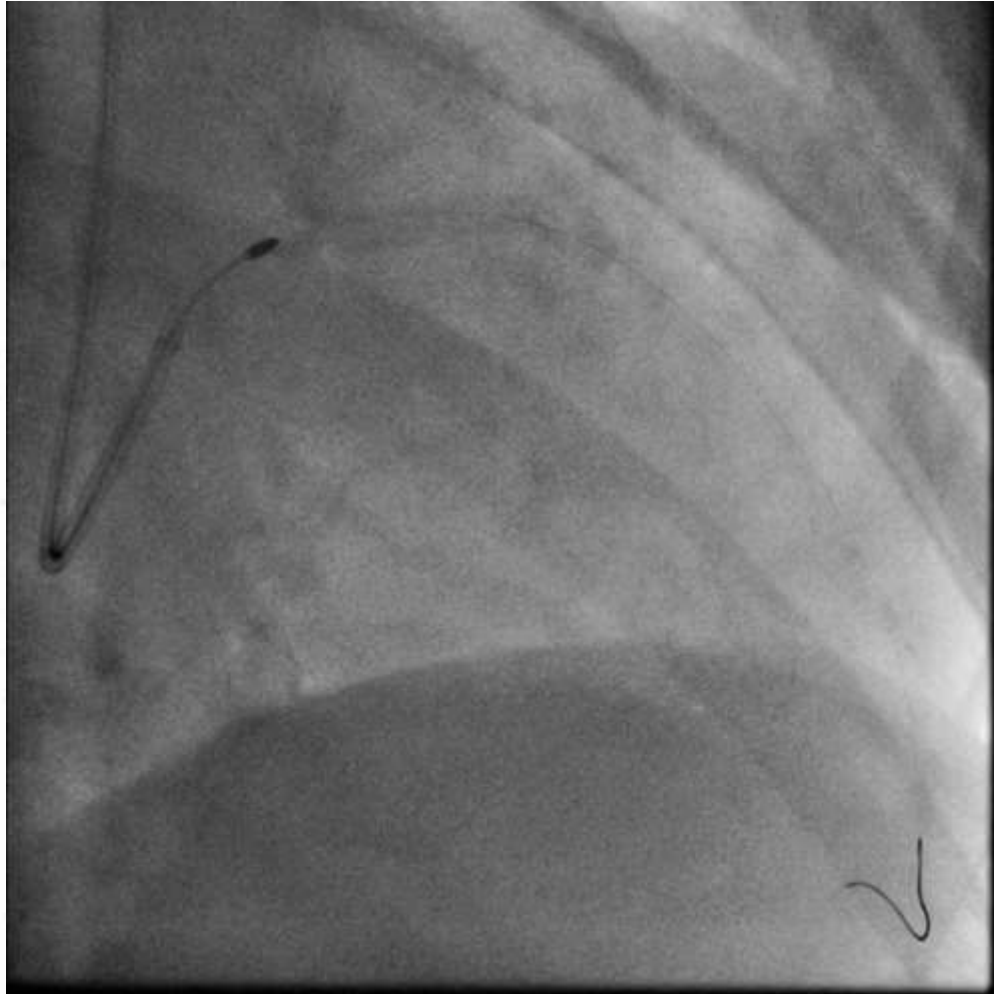


Mid LAD

Distal reference diameter 3.0 mm

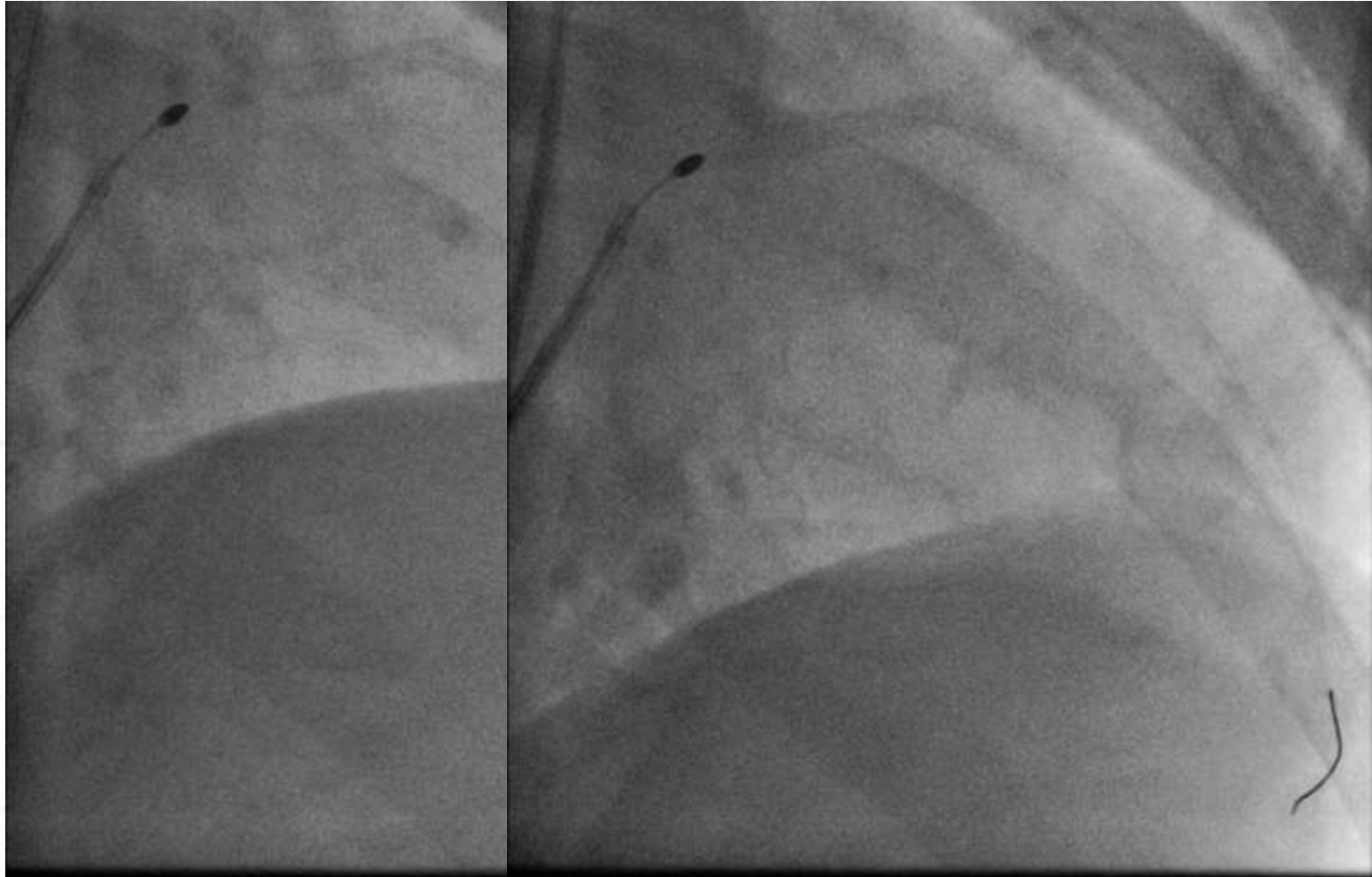


Rotablator 1.5 burr to LAD



200,000 RPM x 2 runs + 140,000 RPM x 3 runs + Polishing runs

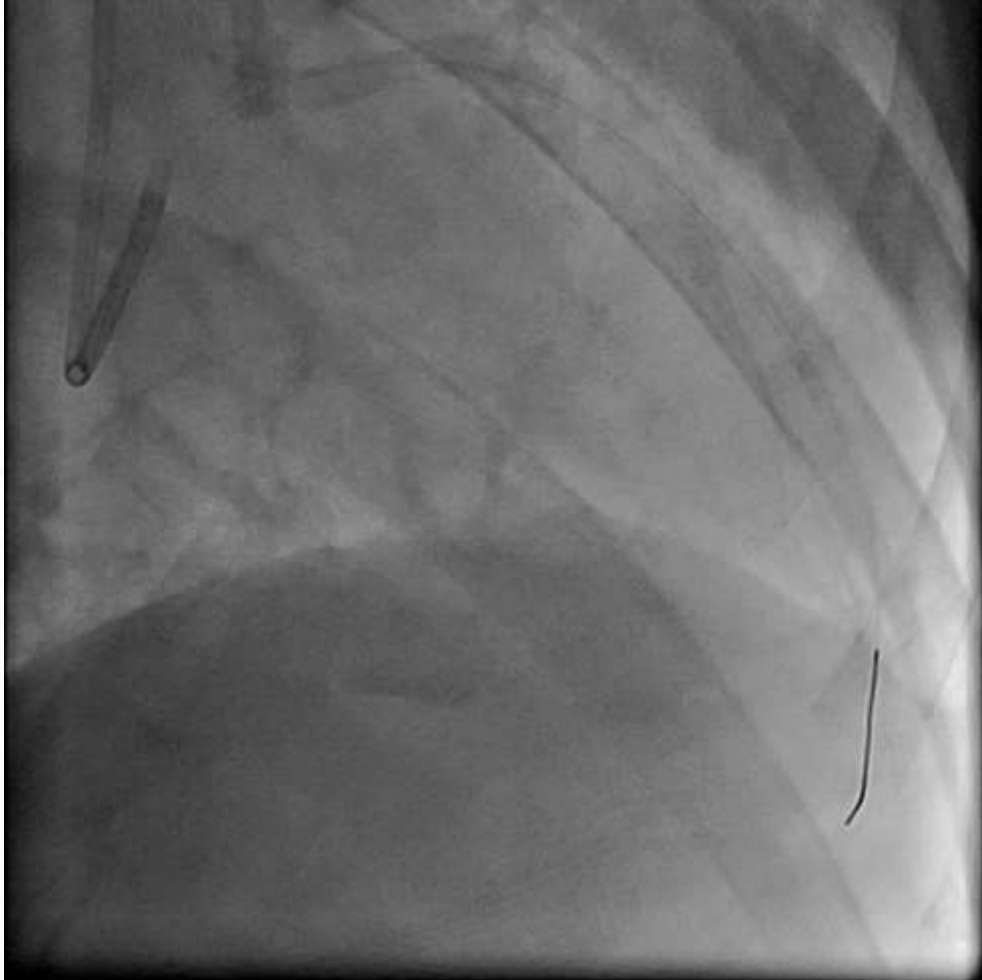
Rotablator 2.0 burr to LAD



Once Rota pass
Pt reported chest pain!
Then hypotension
BP 50/30 mmHg

180,000 RPM x 3 runs

No-reflow Phenomenon – Cardiac arrest



Remove Rota wire out – Change to Workhorse wire

Start CPR

Adrenaline IC

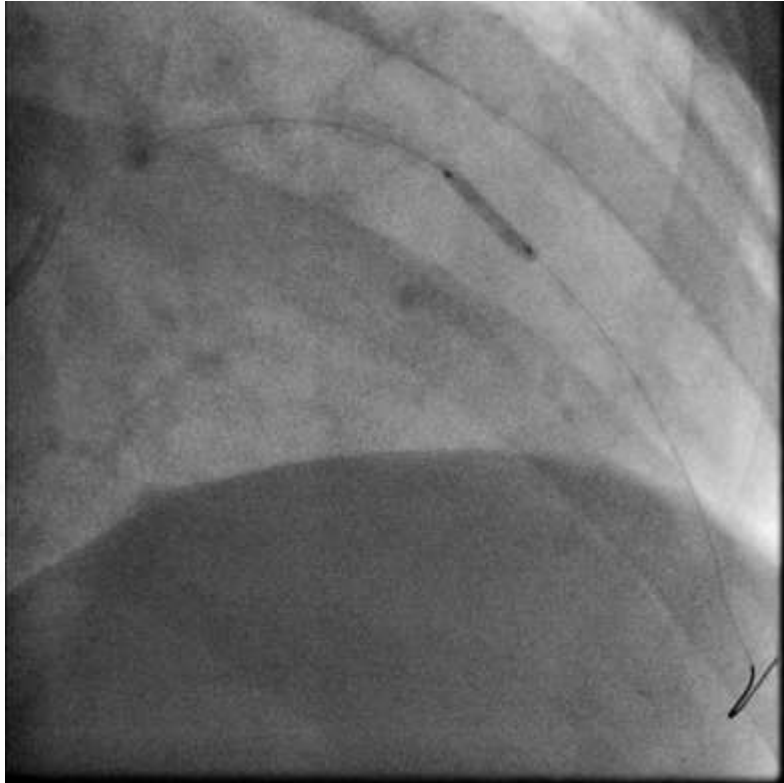
CPR for 10 minutes

-> ROSC

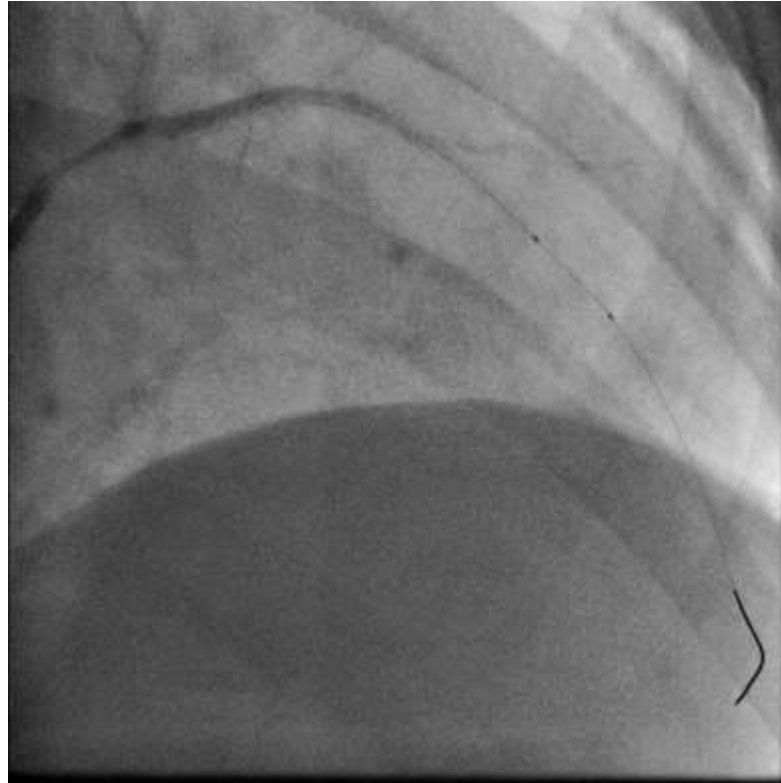
Suspected Emboli

- **Try aspiration catheter to distal LAD**
- **Nothing was obtained from vessel**

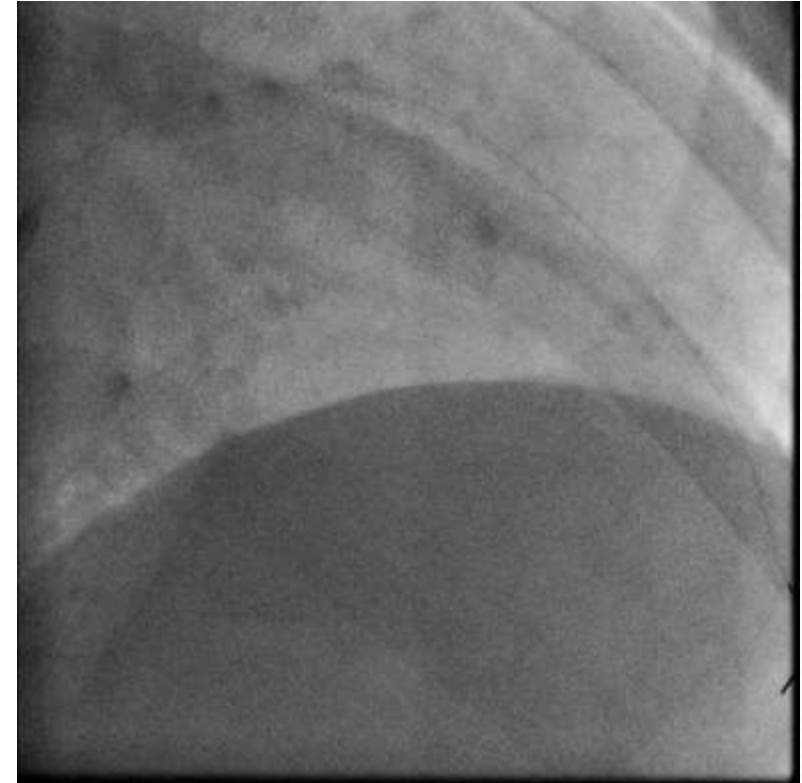
Case continued



**2.5 x 15 mm SC balloon
to mid LAD upto 14 atm**

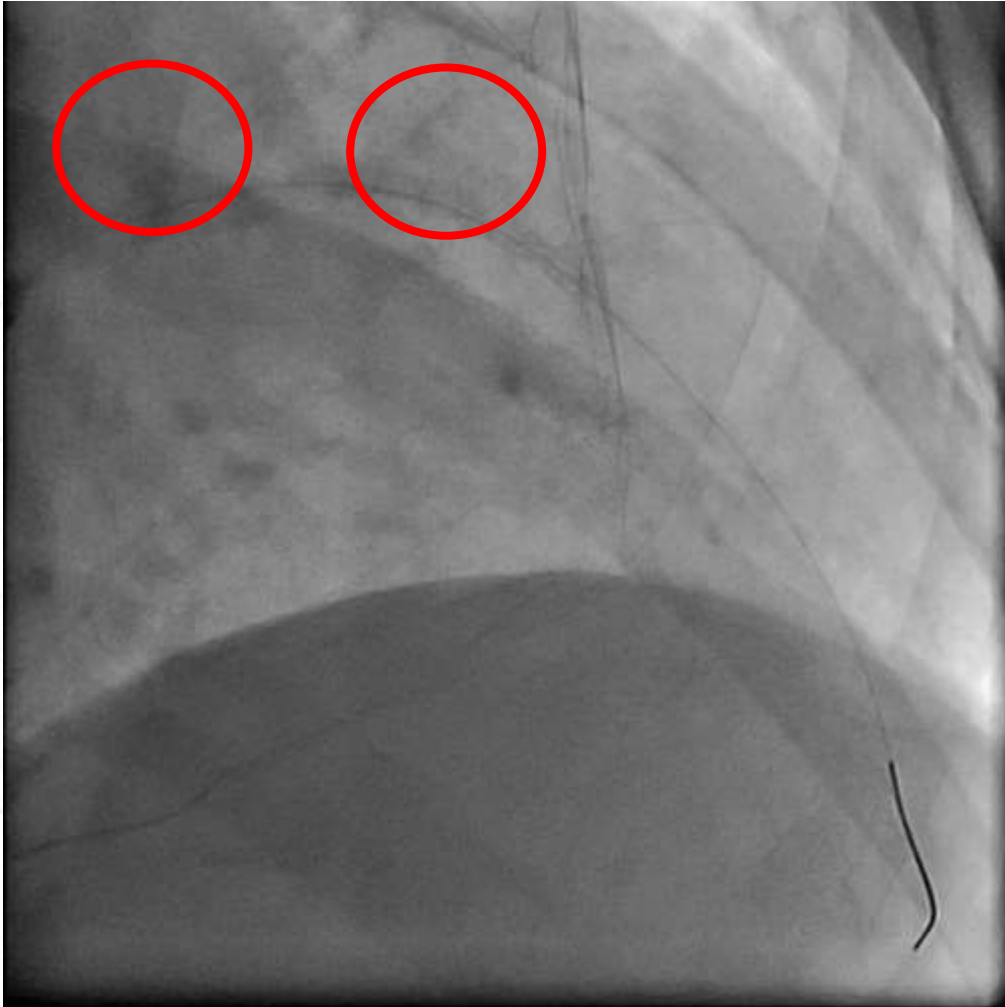


**Cardiac arrest again
Start High dose dopamine
Noradrenaline**



**3.0 x 30 mm SES stent
At mid LAD**

Angiogram after CPR and stenting



**TIMI II flow after LAD stenting
Problem resolve?**

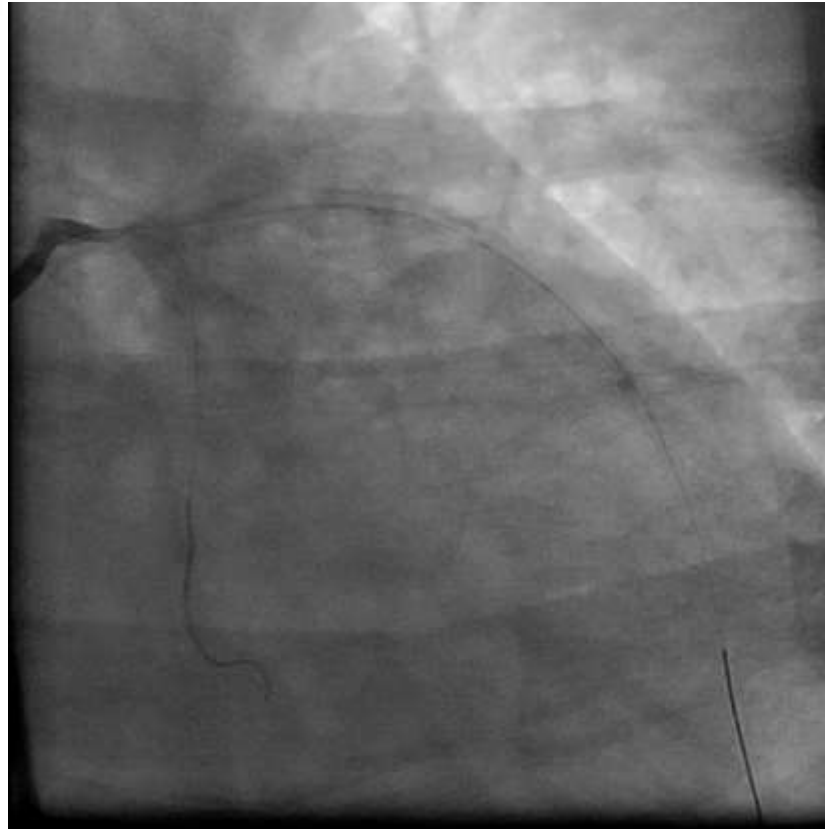
**BP 60/40 mmHg despite high dose Noradrenaline
And Dopamine
ECG monitor also showed ST elevation in I, avL**

Abrupt vessel closure! - Lcx and DG1

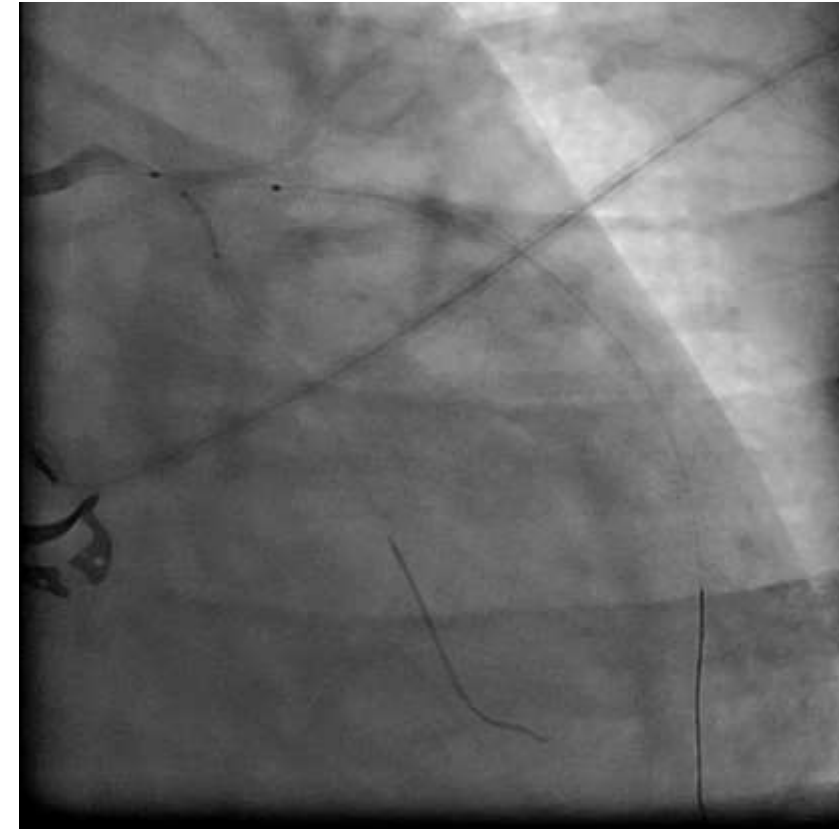
Rewire to Lcx – Sion black wire



**1.5 x 12 mm SC balloon
2.0 x15 and 2.5 x 15 mm
SC balloon predilate**



**Restore Lcx flow
BP raise after that**



Deployed 2.75 x 9 mm SES

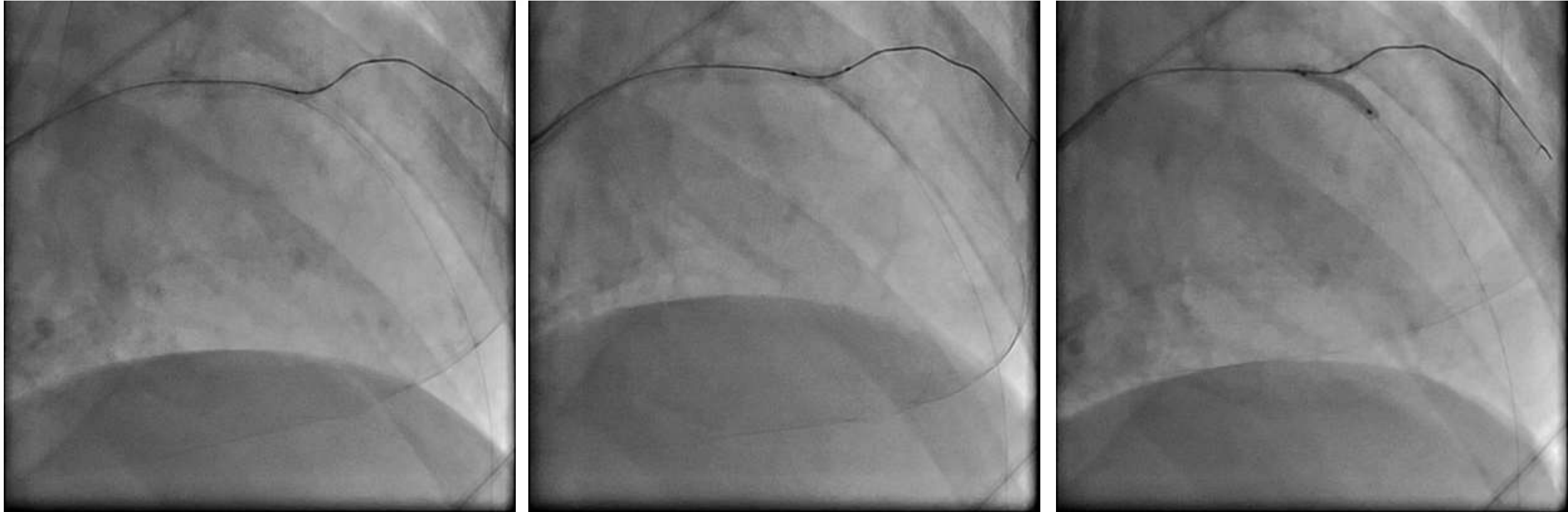
Reverse TAP technique to LM-LAD-Lcx



**Deployed 3.5 x 15 mm SES to
LM-LAD**

**Rewire with Fielder XT-R
KBI with 3.0 x 15 in LAD
2.5 x 15 in Lcx**

Open DG1

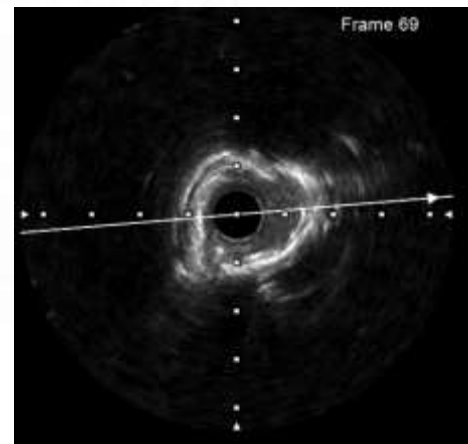
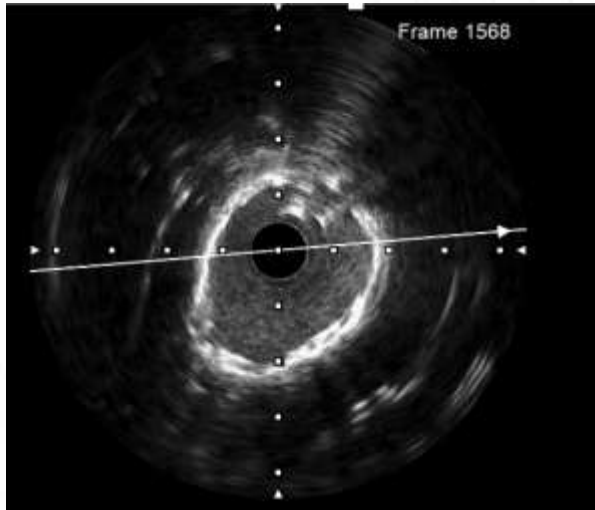


**2.0 x 12 mm SC balloon open DG1
KBI LAD-DG1**

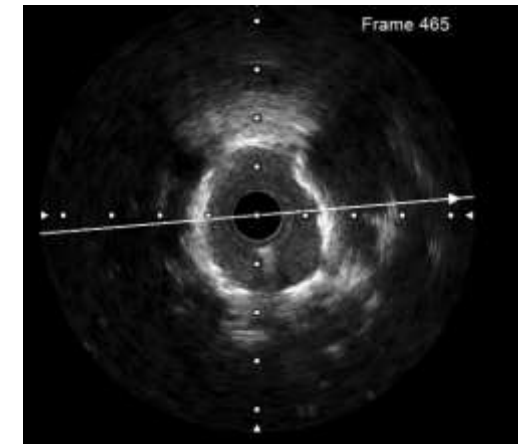
Final Angiogram



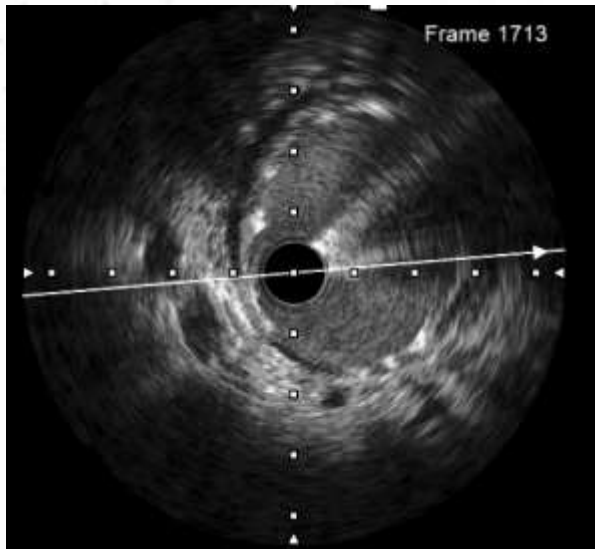
Distal LM



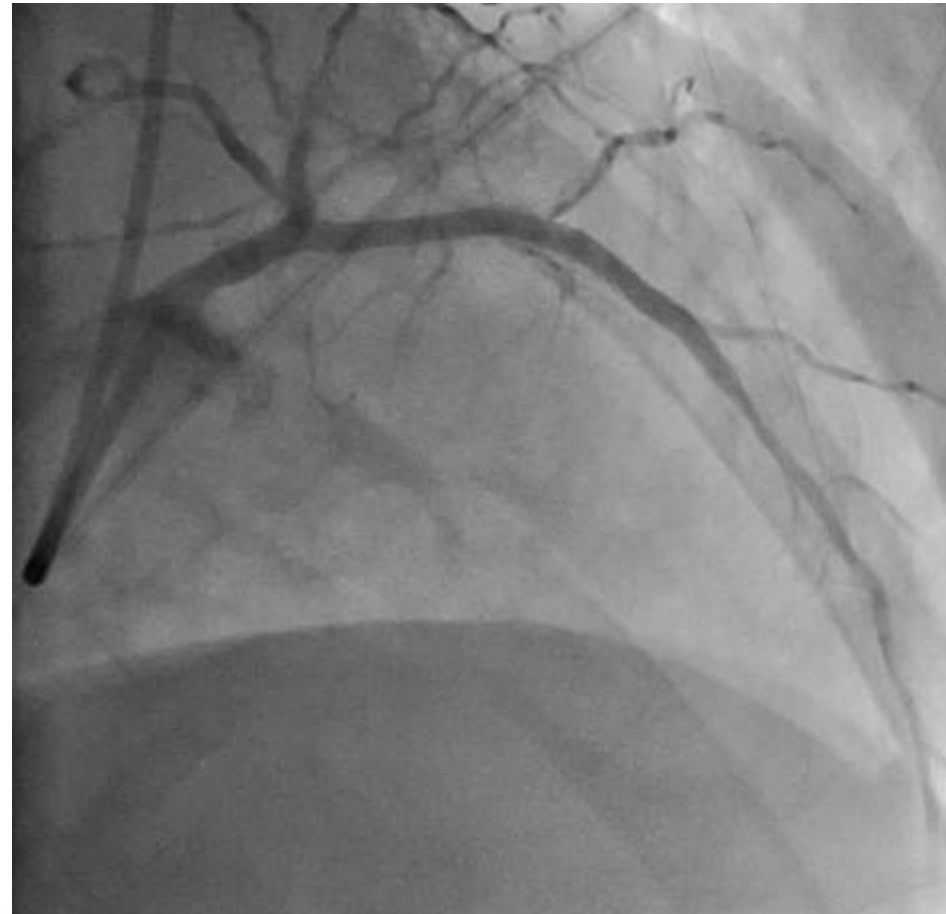
LCx



Mid LAD



Left Main



Progression

- Vasopressor could be taper off on the next day
- Patient was safely D/C at day 3 with full of consciousness

Discussion Points

- What is(are) the etiology of No-reflow phenomenon and abrupt vessel closure in this case?
- Is 1.5 or 1.75 burr Rotational atherectomy adequate for plaque debulking?
To avoid the complication like this case?

Conclusion

- **When the procedure didn't go according to the plan, keep calm and rescue the patient first. Plan B,C,... should be keep in mind.**
- **No-reflow phenomenon accompanied with abrupt vessel closure after rotational atherectomy can be occurred at the same time and lead to devastrating situation**
- **Simple and fast action should be done to safe the patient life**

Thank You for Your Attention