University Hospitals Birmingham NHS Foundation Trust

2021 euroPCR

How to prepare a calcific bifurcating lesion

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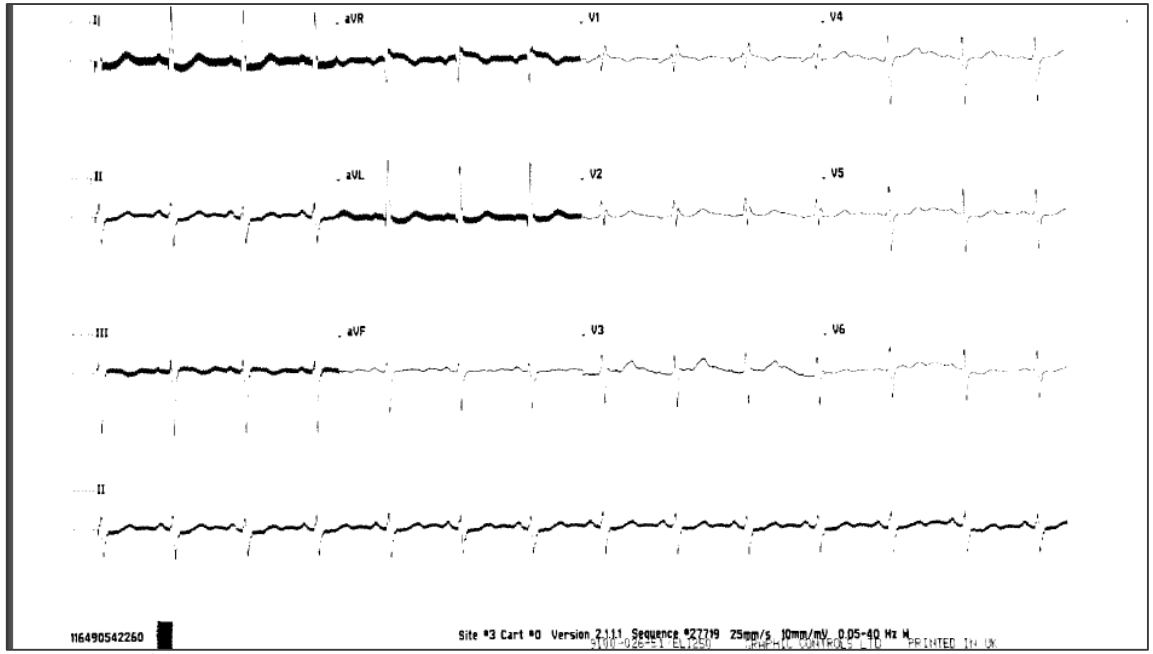
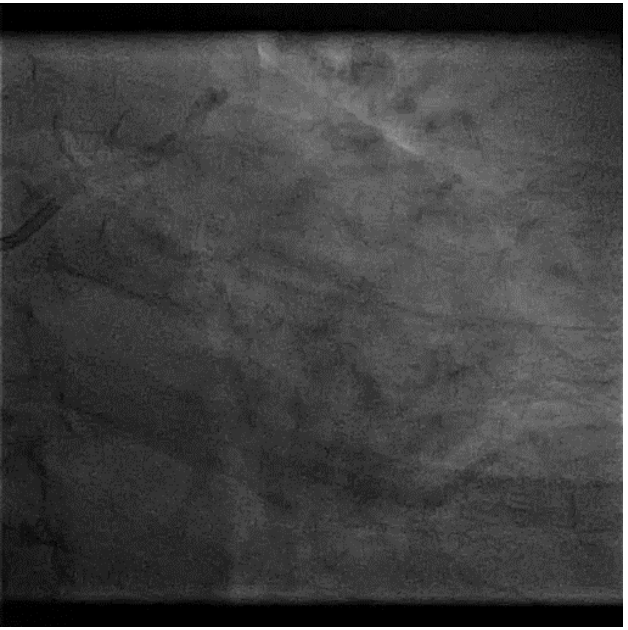
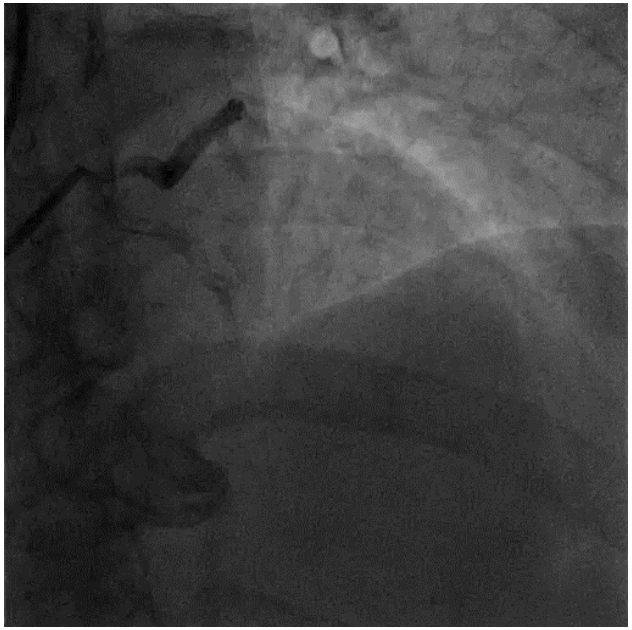
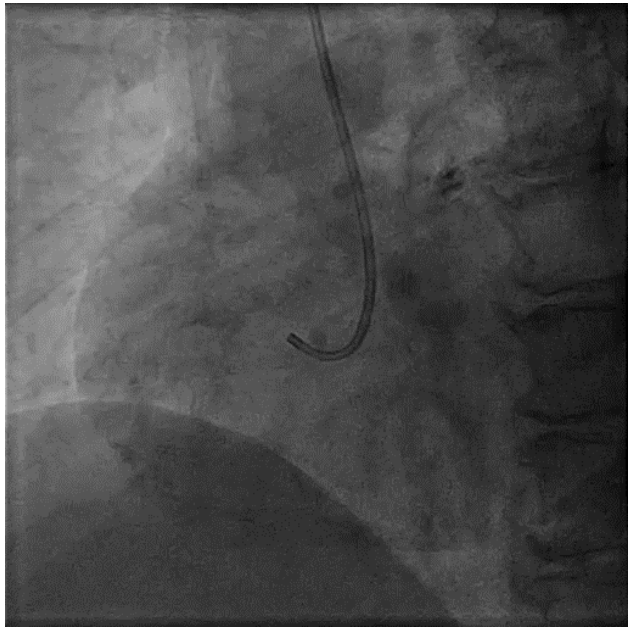
We have no conflict of interest

Background

- 63 Malaysian female with past history of hypertension
- Presented with worsening chest pain radiating to the jaw.
- Chest pain started 2 months ago , mainly when going upstairs
- ECG showed incomplete RBBB and T-wave inversion in V5,6
- HS- Trop I is positive at 61 (< 16 ng/l)



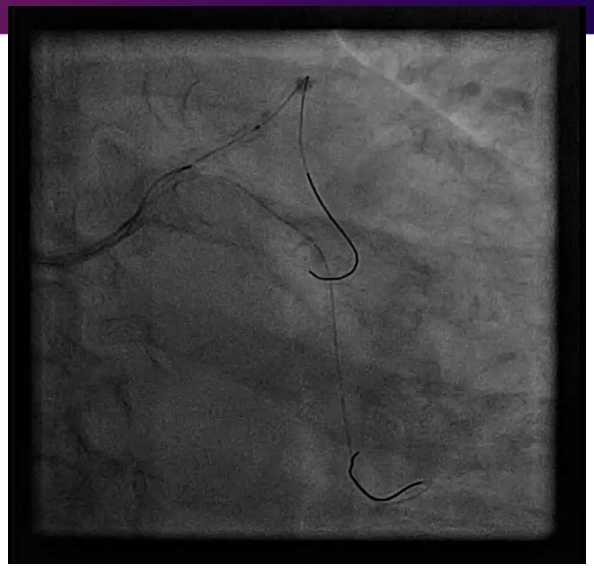
Coronary angiogram

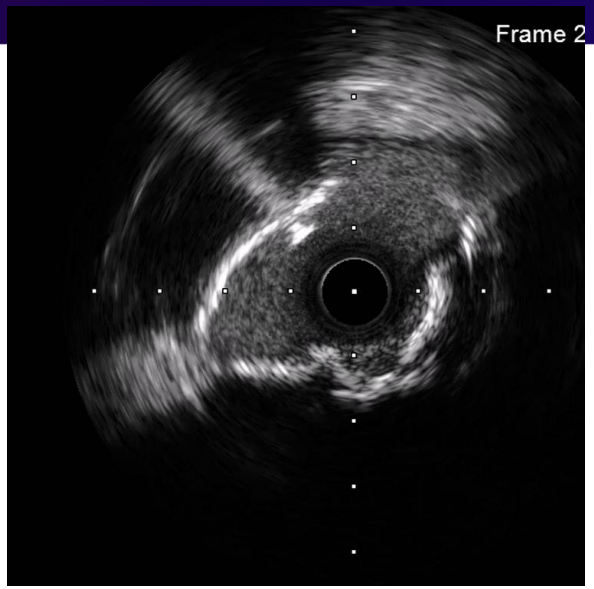




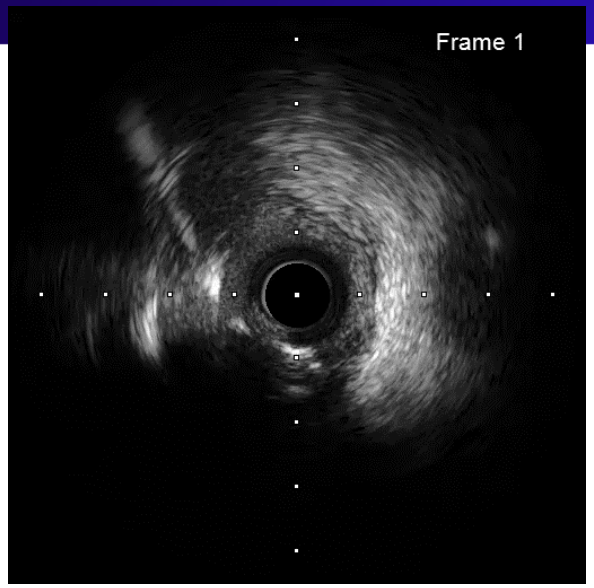
- Left main was atheromatous without pressure dampening in engagement
- LAD showed moderate proximal disease
- There was tight thrombotic lesion in ostial circumflex
- RCA has severe distal disease

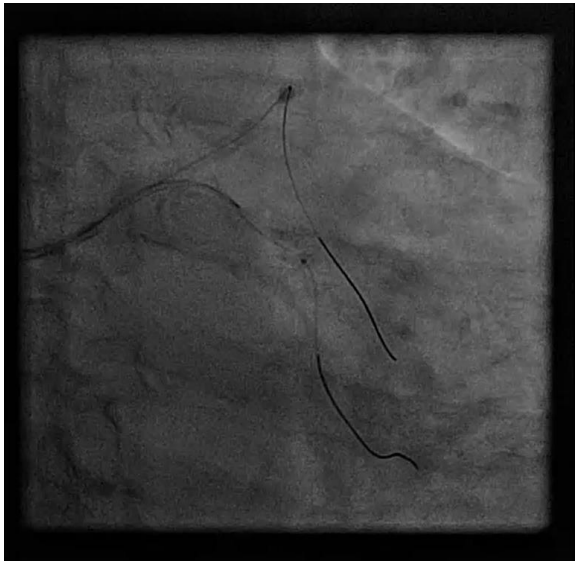
Patient had ongoing chest pain on table and ST depression.
After discussion with our surgeons, they couldn't offer an urgent CABG. (the case was during the peak of COVID pandemic and no ITU bed was available)
We elected to procced to PCI

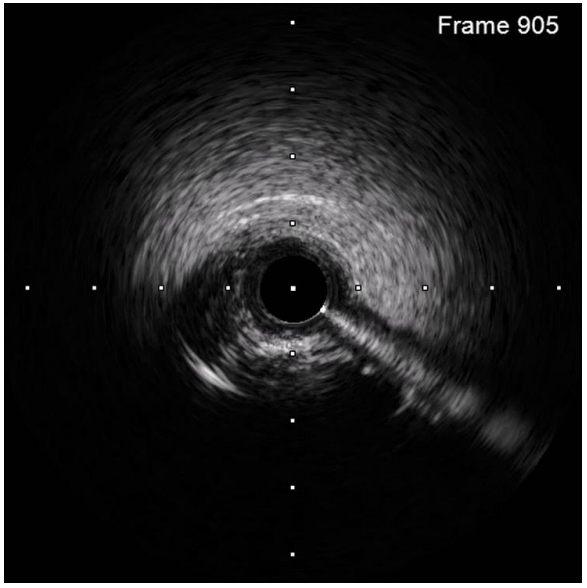
IVUS to LAD and Cx

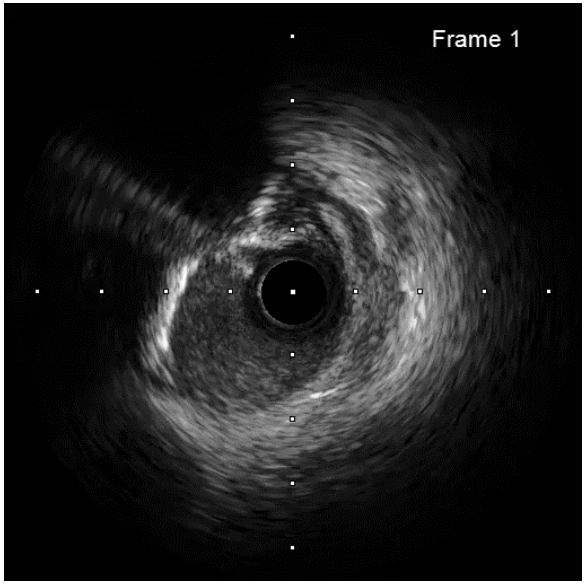












VL 3.5 Guide 6 Fr Wiring both LAD and CX IVUS to guide our strategy

IVUS showed 270 degree of severe calcification in LAD ostium and nearly 180 degree of calcification plus thrombus in Cx ostium

That means

- Complex Lesion :Bifurcating lesion Medina 0,1,1 involving LMS requires 2-stent strategy
- Calcification: increase risk of perforation and rupture
- Thrombotic lesion: increase risk of No-reflow and distal embolization

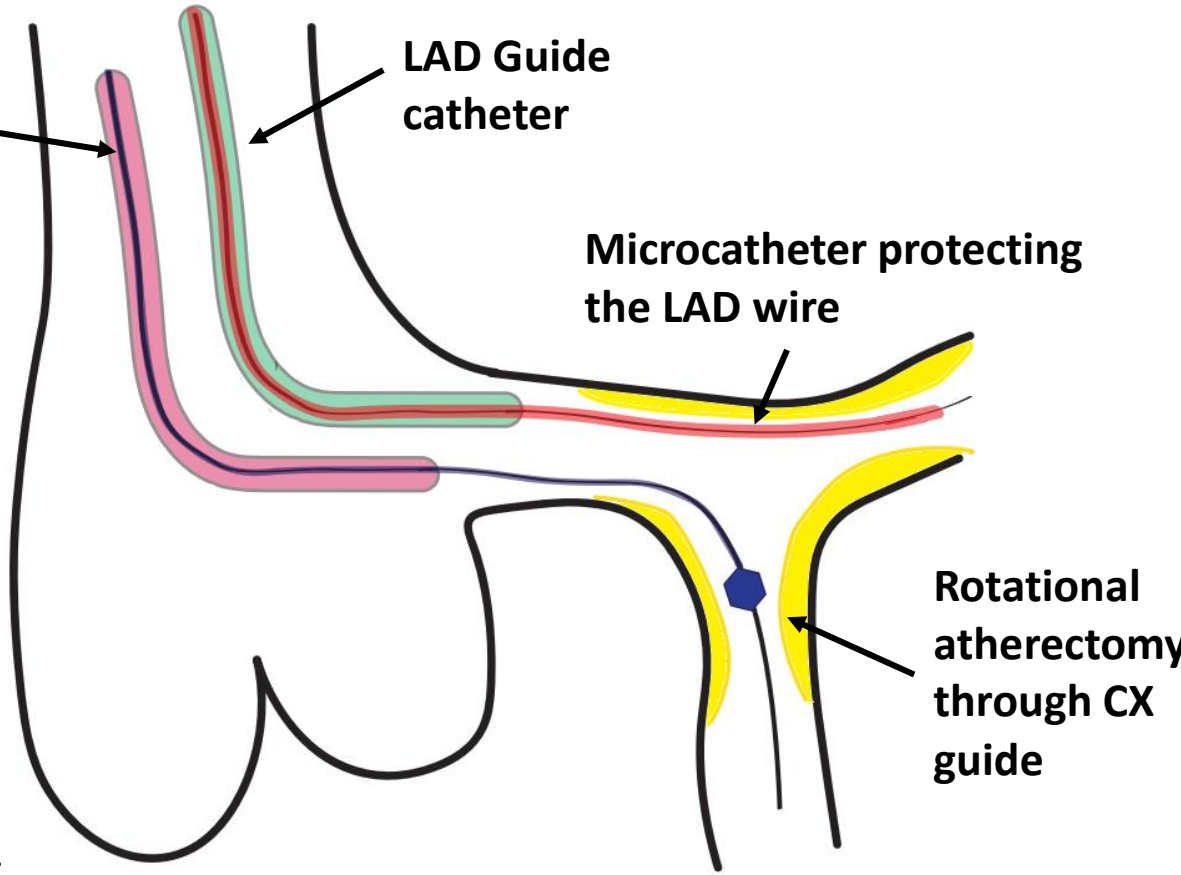
We opted to do rotational atherectomy to prepare the lesion however **we did not want to lose our access to each vessel**

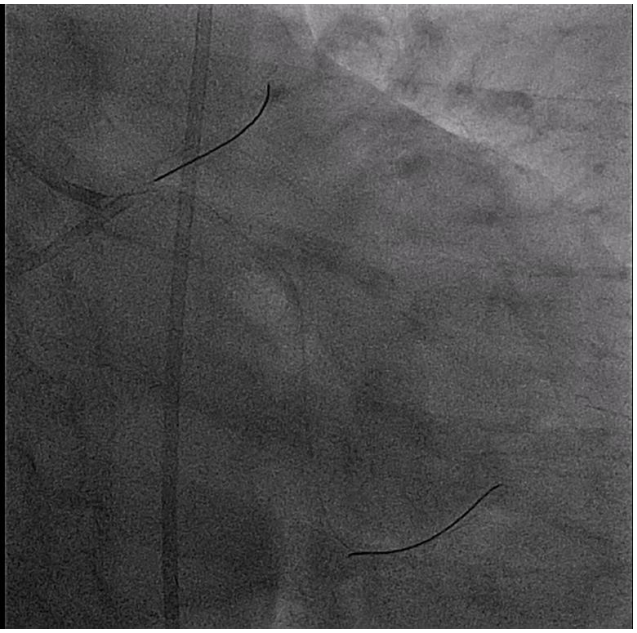
So, we decided to perform Rotational atherectomy using **(Dual guide catheters technique)**

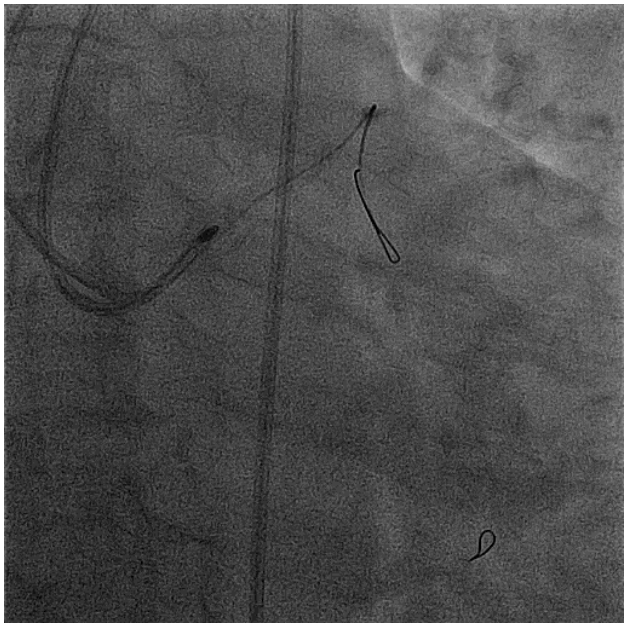
Dual Guide catheter technique for rotational atherectomy

The principles

1. Dual access
2. 2 Guide catheters, One has a guidewire placed in the main vessel and the other one has a guidewire placed in the side branch
3. Rotational atherectomy through one guide catheter with protecting the side branch wire by a microcatheter
4. The microcatheter structure gives protection as it is made of braided stainless steel and has a hydrophilic coating.





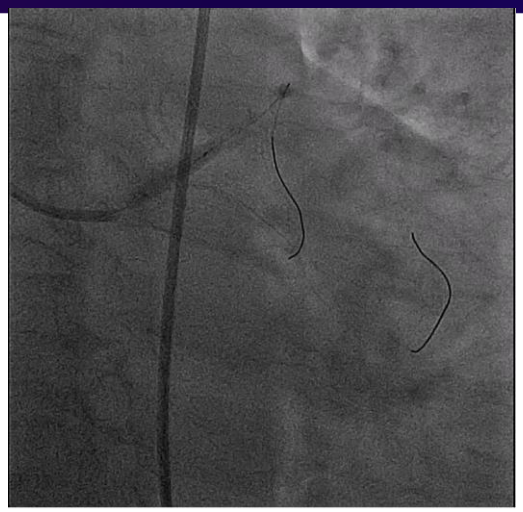


We gained femoral access (ultrasound guided and using a micro puncture) and a 2nd VL3.5 7 Fr Guide was used

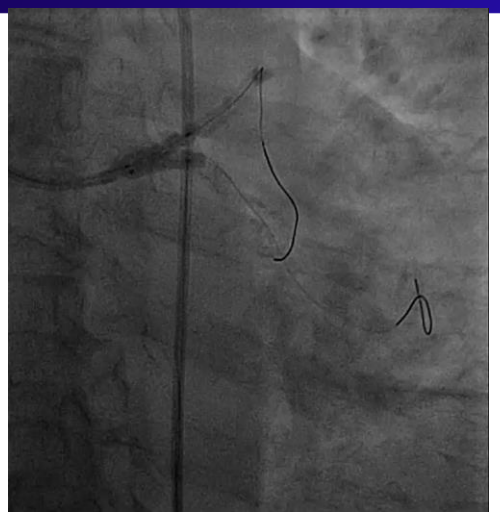
Rotablation with 1.5 burr was performed to LAD and CX with a Caravel microcatheter over side branch wire

Then proceeded to DK crush through the 7 Fr femoral guide catheter

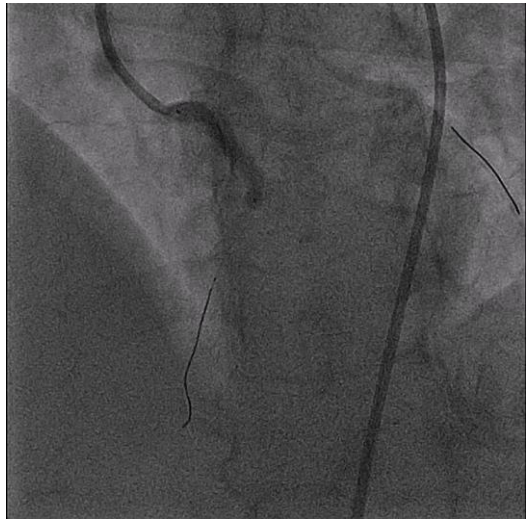
3.5 x 19 DES in CX



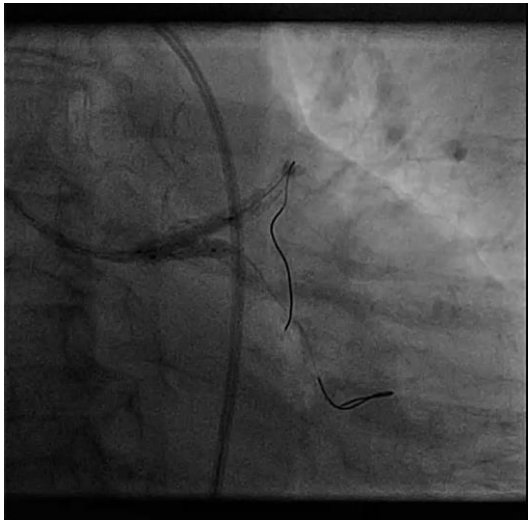
Crushing with 3.5 NC balloon



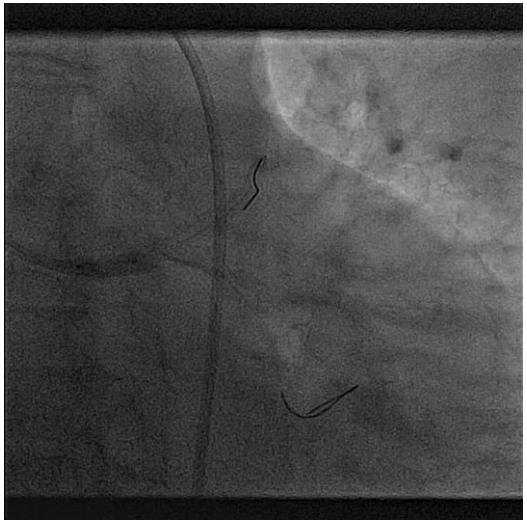
Kissing with 2 x NC 3.5 mm



3.5 x 33 DES in LAD

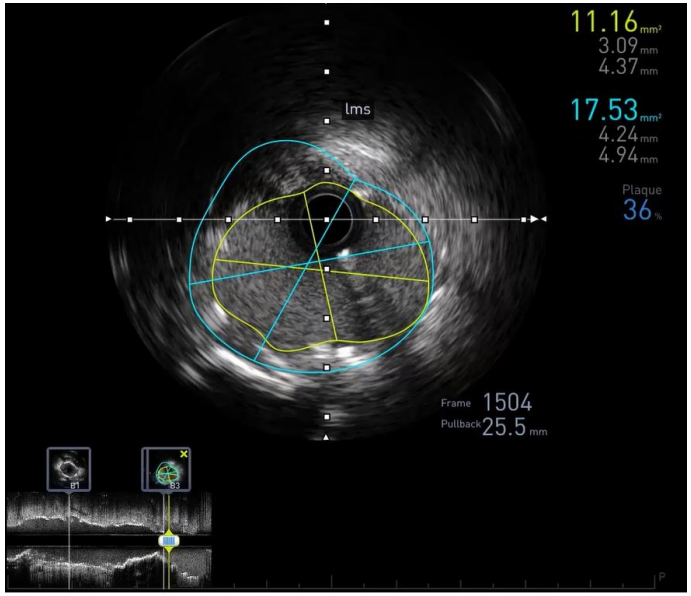


Kissing with 2 x NC 3.5 mm

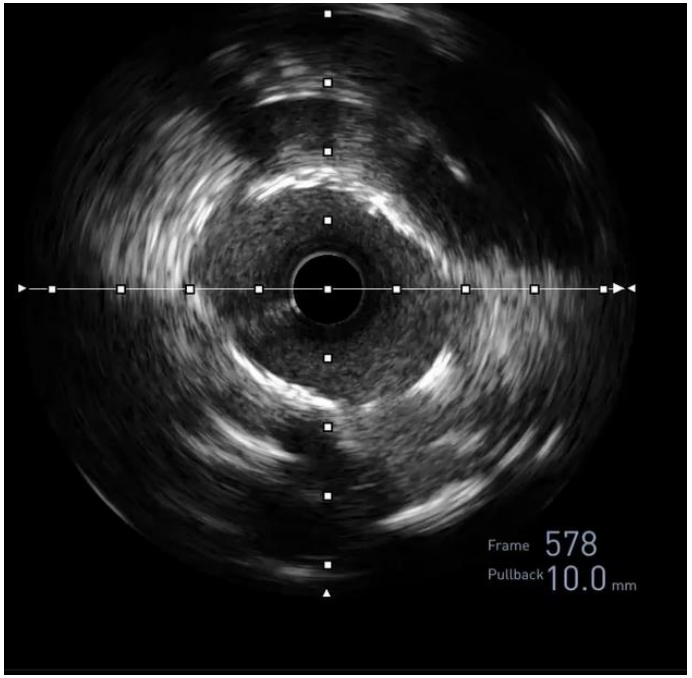


POT to LM with 4 mm NC

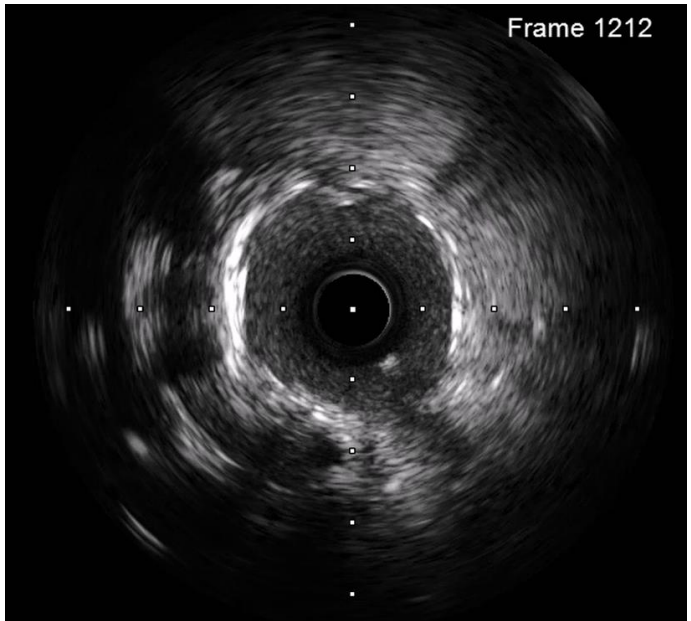
Final IVUS



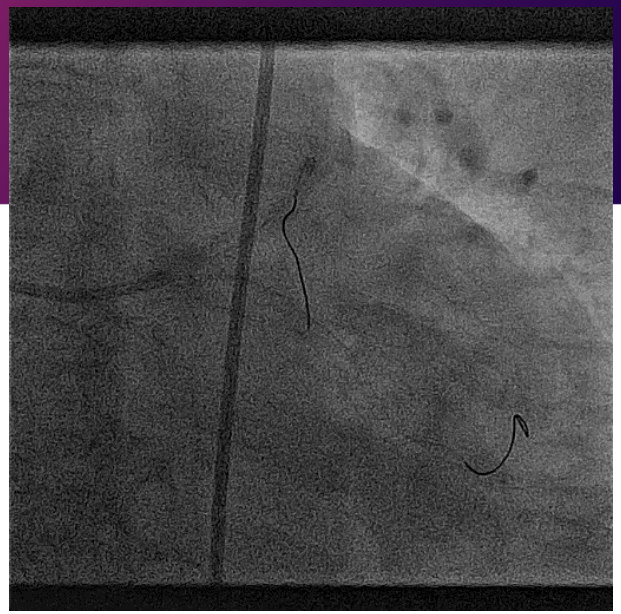
IVUS LM

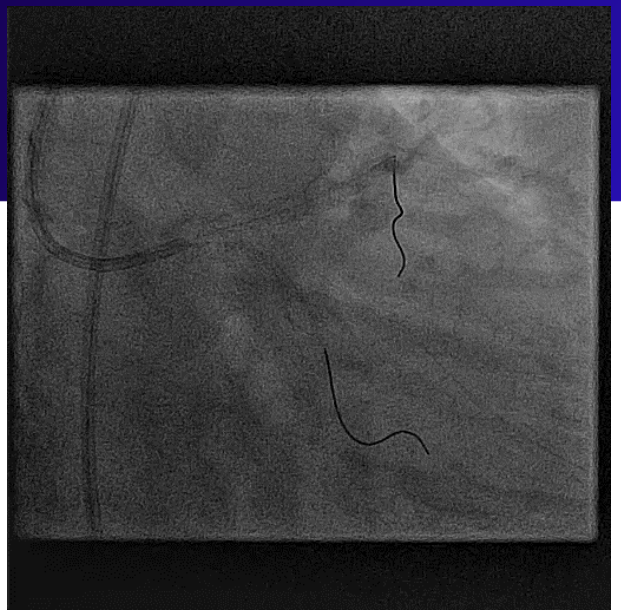
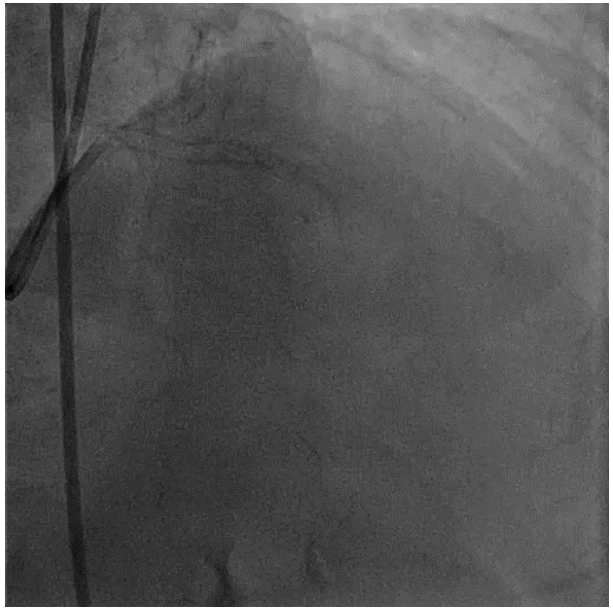
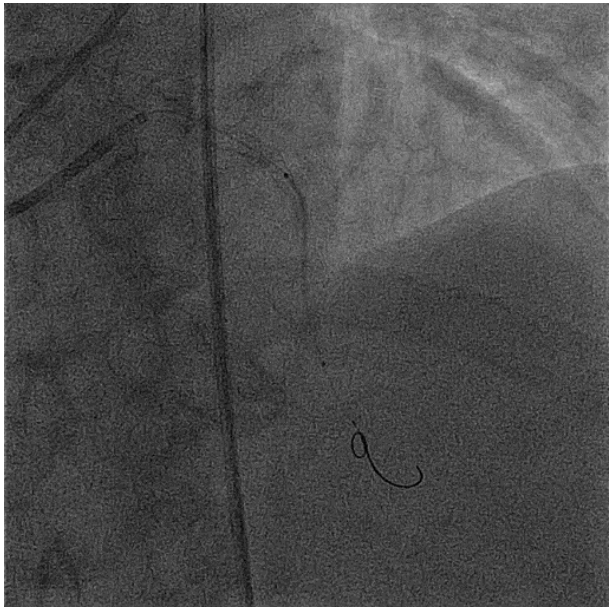
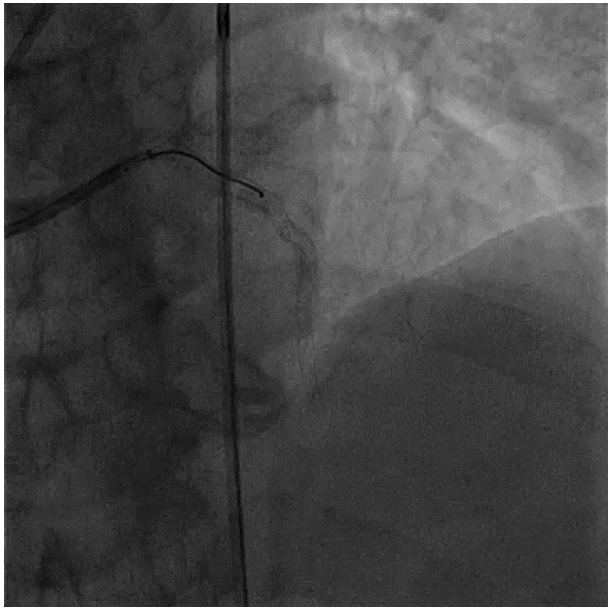


IVUS CX



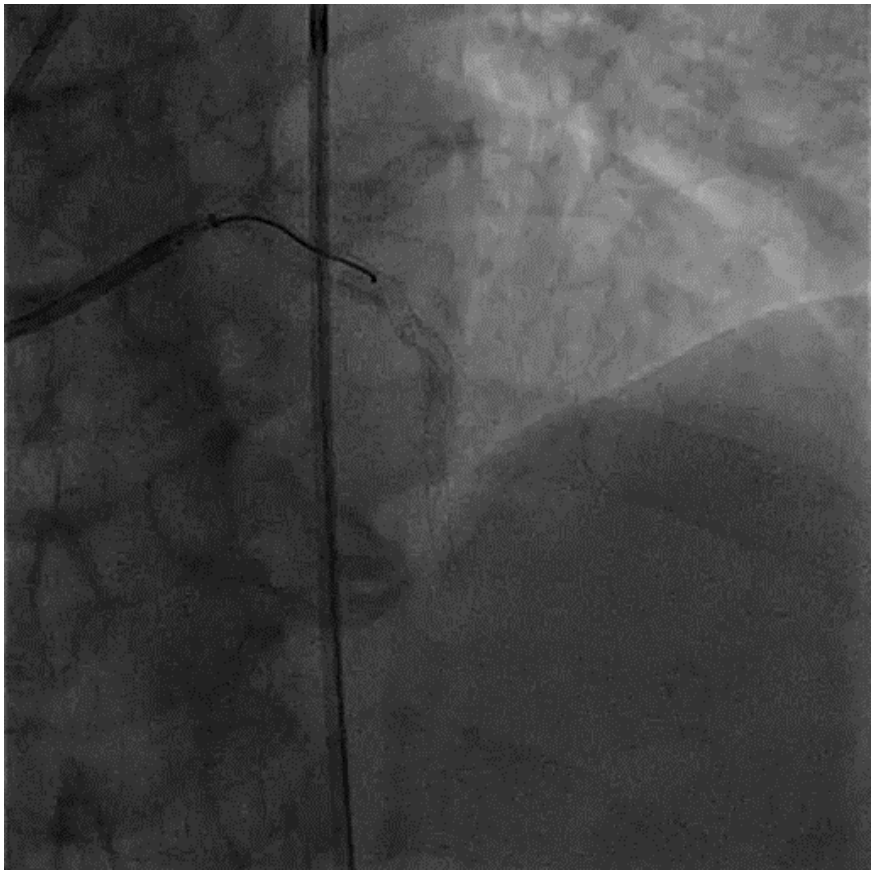
IVUS LAD



- **There was haziness at the distal edge of CX stent so deployed another3 x14 mm stent distally**
- **There was likely edge dissection in mid LAD required Guidezilla guide extension catheter to facilitate stent delivery – stented by 2.5 x 29**

Final result



Patient had smooth recovery and discharged next day

Take home messages

1. **Intracoronary imaging always helps to plan your strategy**
2. **Build up your plan on anticipated complication**
3. **Dual guide catheter technique is feasible and has several advantages in case of complex LMS PCI requiring rotational atherectomy of both branches**
    - It provides a backup strategy in case of complication like rescuing stuck Rota burr or coronary perforation / rupture
    - 2nd benefit, it allows to perform rotablation without losing access to any vessel by securing the side branch wire with a microcatheter

Thanks