CATHLAB NIGHMARE-LAD PCI COMPLICATED BY GRADE 3 PERFORATION

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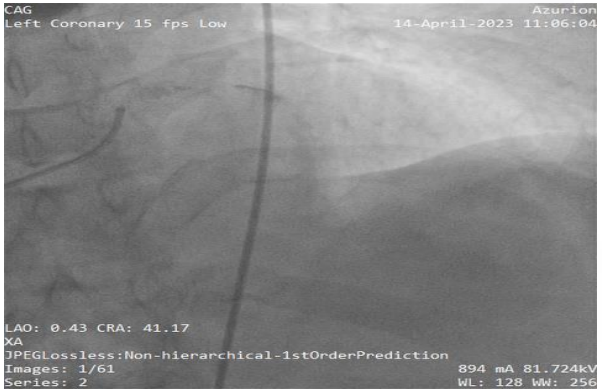
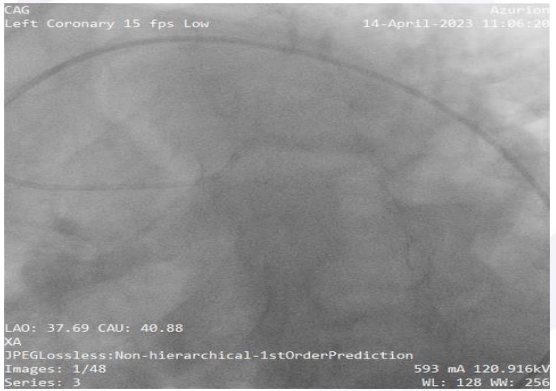
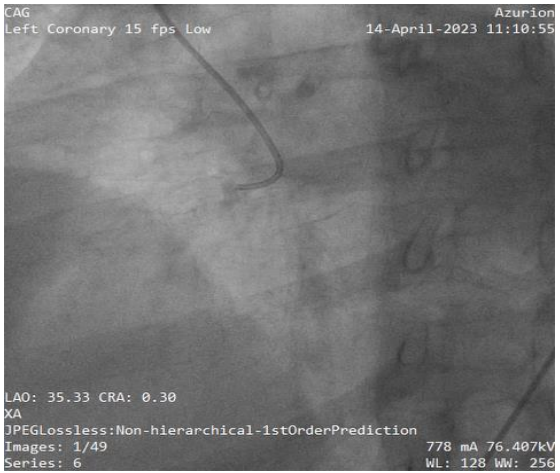
Clinical Details

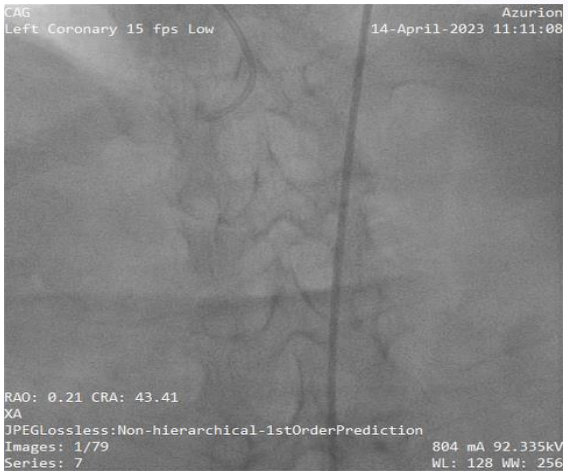
- 80 year old female patient named Mrs L P
- Hypertension(18 years), History of Rectal Mass(Resection and pelvic radiotherapy in past)
- Recent NSTEMI- admitted and medically stabilized at outside hospital
- ECG- NSR, ECHO- EF-60%, Trace MR
- Coronary Angiogram done at outside hospital- calcified LAD

Coronary Angiogram





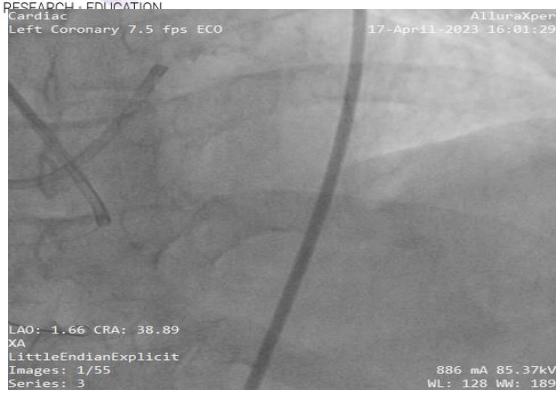


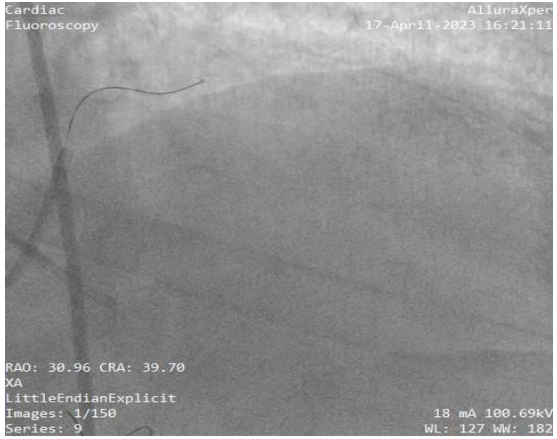


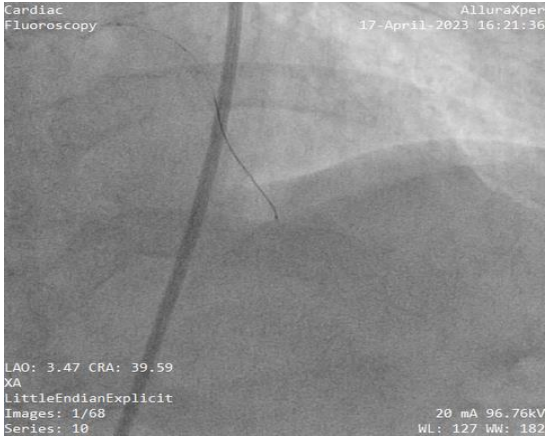
Interventional Plan

- Heart Team discussion- Patient opted for PCI
- Bilateral radial and femoral access
- Antegrade Wire escalation as default strategy- Retrograde as a backup
- Use of proper calcium modifying tools
- Imaging to guide and optimize PCI

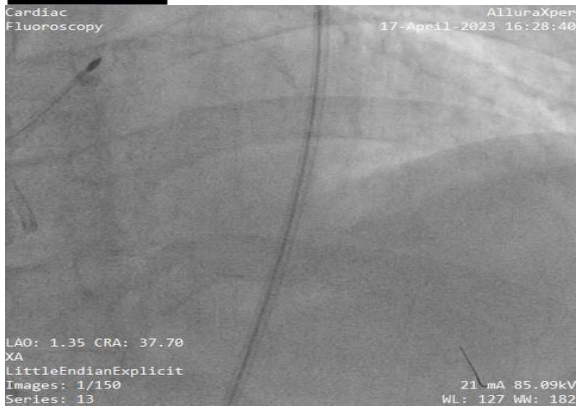
Bilateral Injections were taken. We were able to negotiate the tortuosity and calcification in proximal LAD with a PILOT50 guidewire and Finecross microcatheter support. The guidewire position in distal true lumen was confirmed in orthogonal views. The RCA guiding catheter was removed.

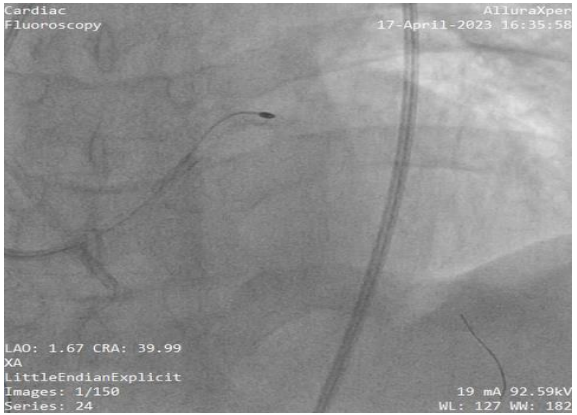


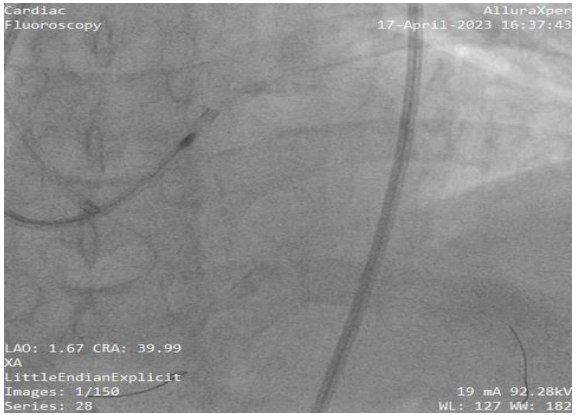




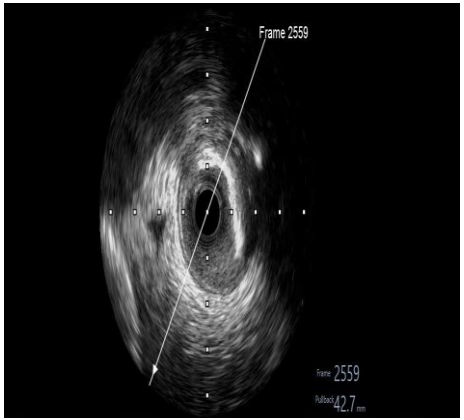
The IVUS catheter would not cross neither would a 2.0 mm balloon. We decided to do Rotablation with a 1.5 mm burr. There was significant resistance and deceleration in distal LMCA and Ostial LAD. We were able to cross the lesion at 180000 rpm. The total burring time was 3 minutes and 30 seconds.

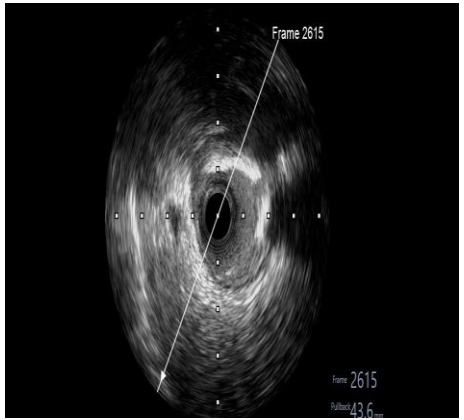


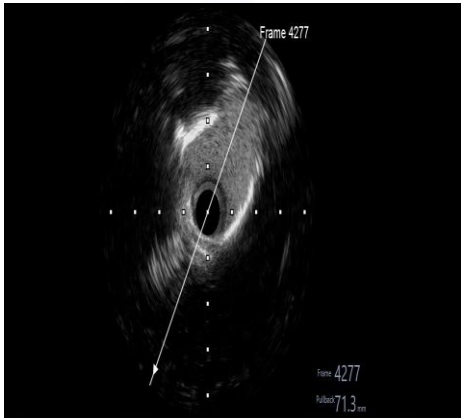


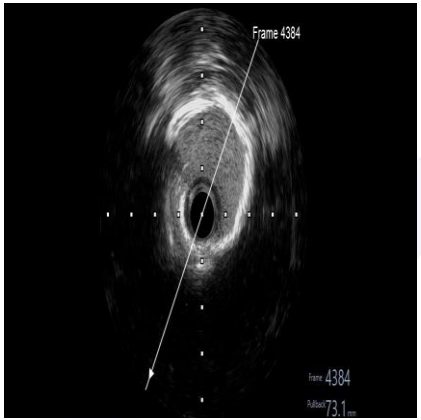


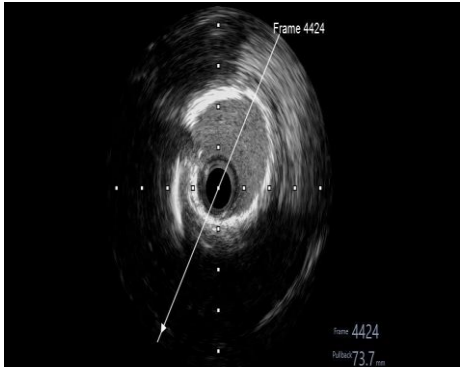
The lesion was predilated with 2.5 mm balloon. IVUS showed 180-270 degree arc of calcium at lesion site and Ostial LAD and LMCA. Fractures were appreciated in the calcium which appeared largely superficial. There was ectasia in the LMCA close to the ostium.

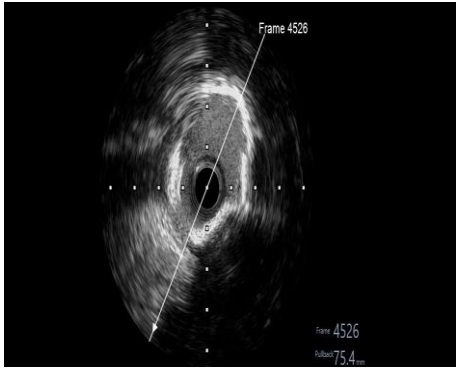


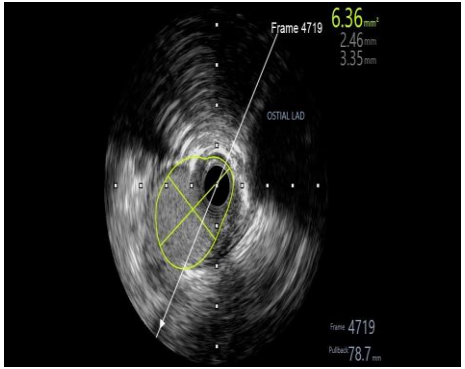


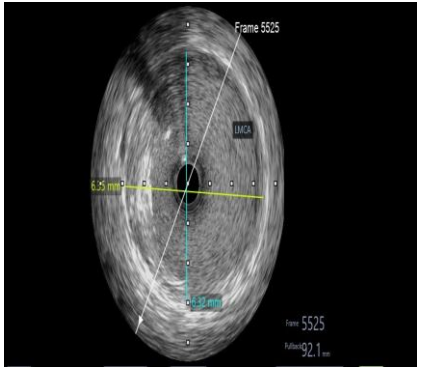




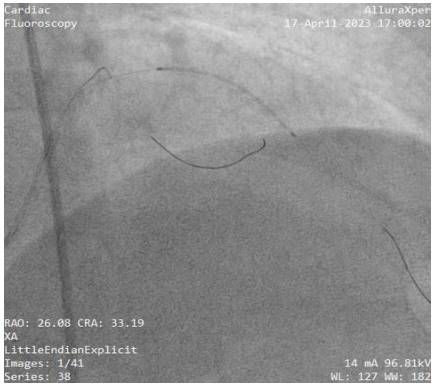


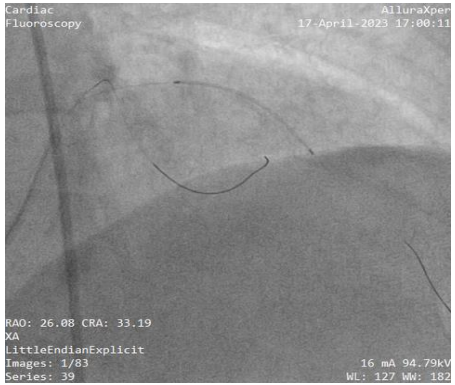


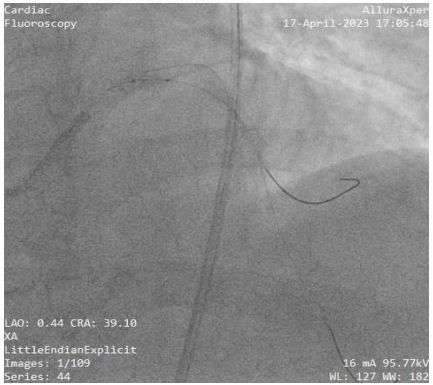


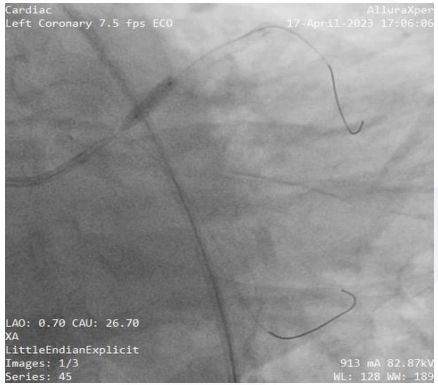


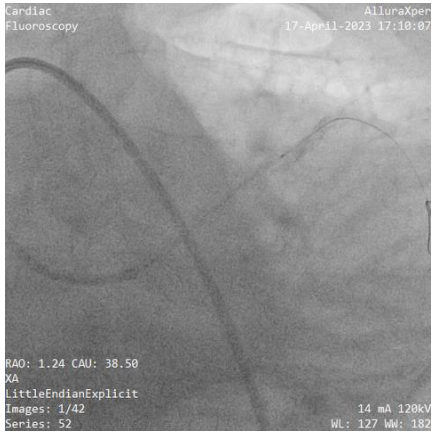
We placed a 2.75*38 DES from proximal to mid LAD. We prepared the lesion site and LMCA and Ostial LAD with 3.5*10 mm Wolverine cutting balloon. Another stent 4*38 was placed from LMCA to LAD.

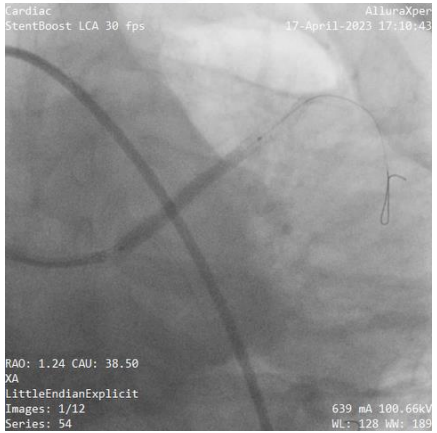




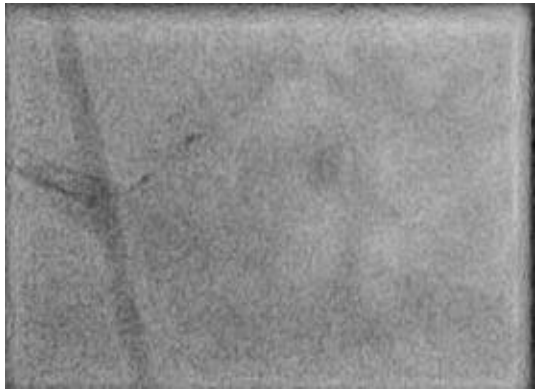


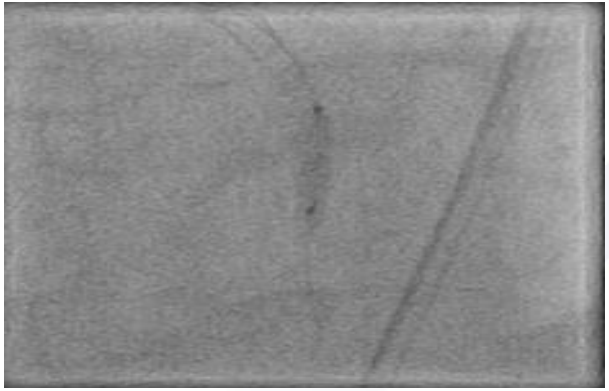


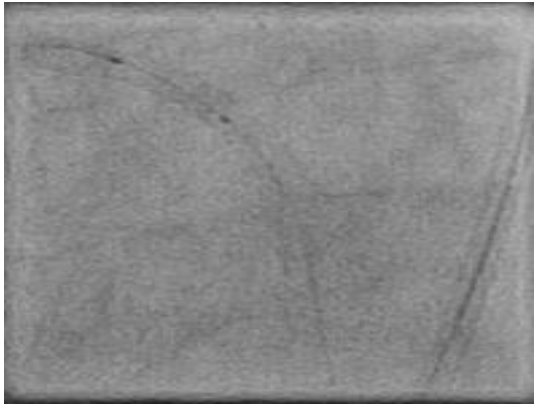


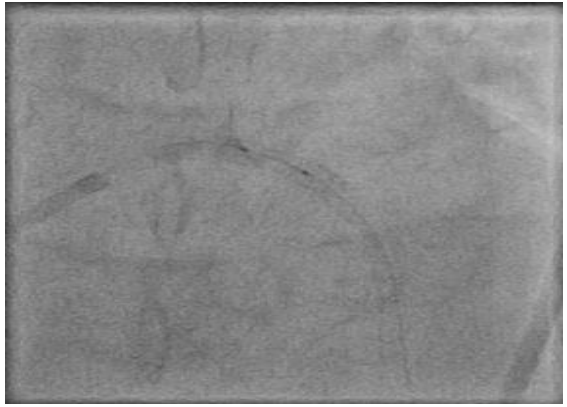


POT was done with 4.5*8 mm NC balloon. The stent was optimized with 4.0 mm NC balloon for distal LMCA and ostial LAD, 3.5 mm NC balloon for the proximal LAD and 3.0 mm NC balloon for the mid LAD.

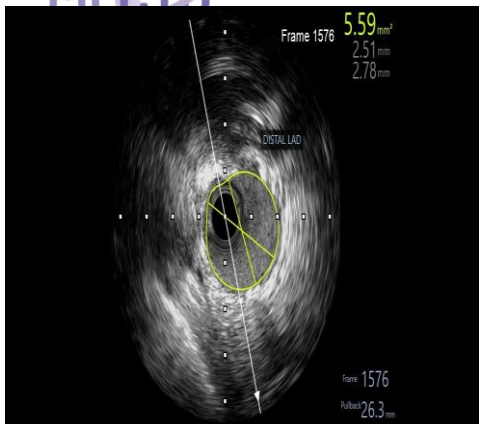


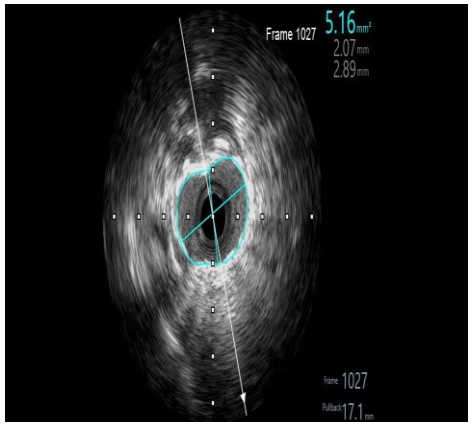


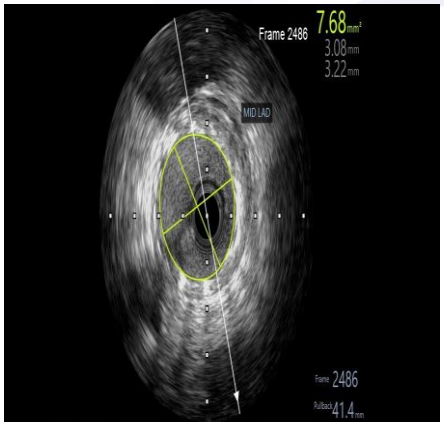


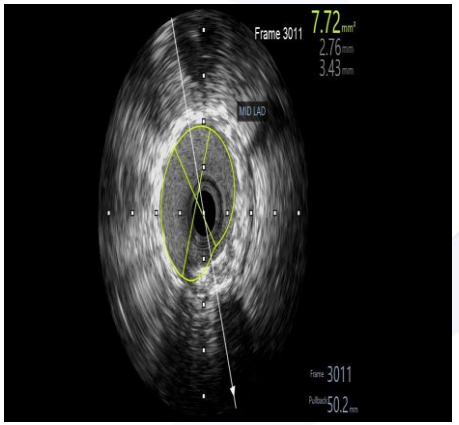


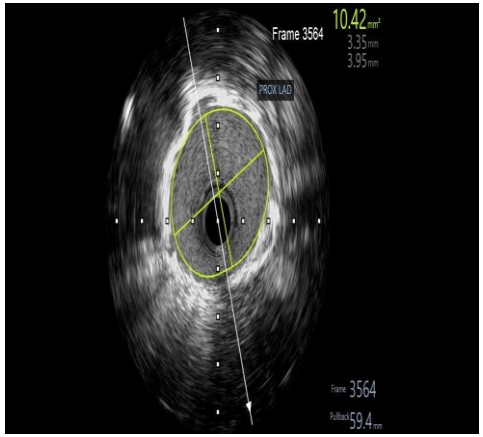
IVUS showed good expansion and apposition except for a small area in distal part of stent where I felt we had mild underexpansion.

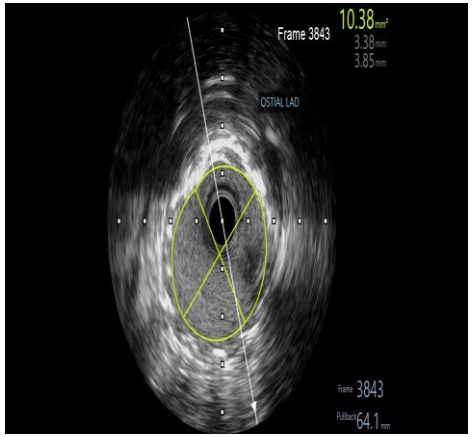


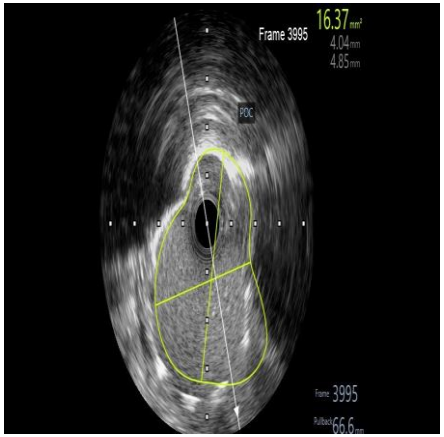


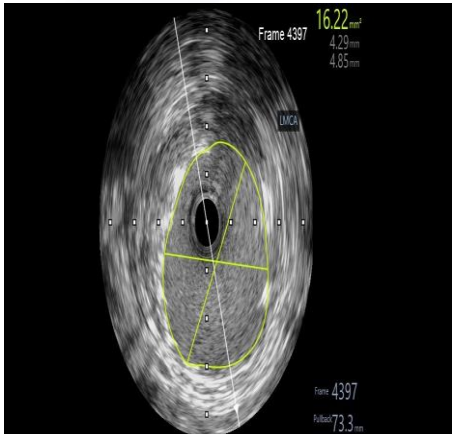




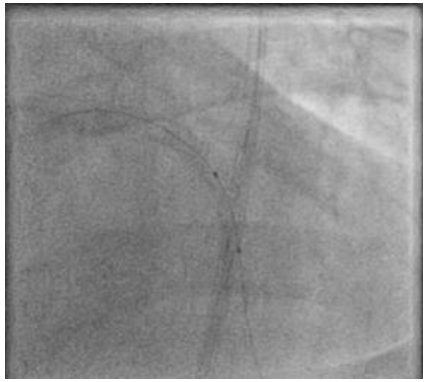


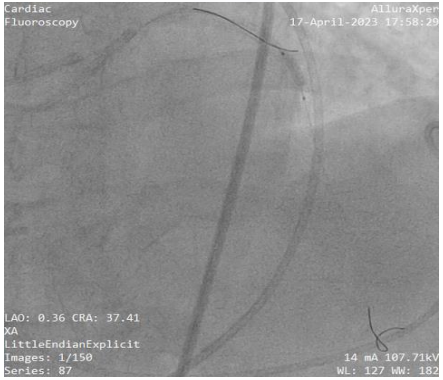


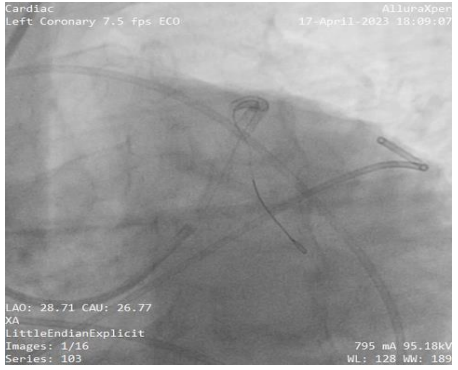




WE went with a 3.0 mm NC at the underexpanded site. Suddenly the patient developed hypotension and syncope. A small injection showed a large mid LAD perforation. We inflated the balloon at low pressure across the site of perforation. Urgent pericardiocentesis and autotransfusion was done. 2.8* 26 mm Graftmaster stent was deployed via Ping-Pong technique. The Graft master was postdilated with a 3.0 mm NC balloon. The final angiographic result was satisfactory. Patient is doing well on follow up.







Take Home messages

- Rotablation and cutting balloon are must have devices for calcium modification

- Imaging helps in stent sizing and post stent optimization. But it is safe to undersize the balloon in heavily calcified vessels especially when we want to perform high pressure post dilation.

- Covered stents are lifesaving in massive perforation.