

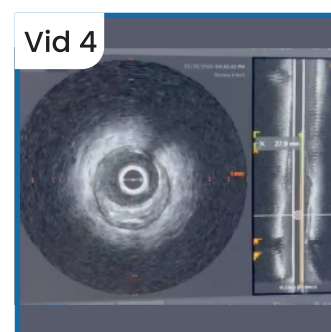
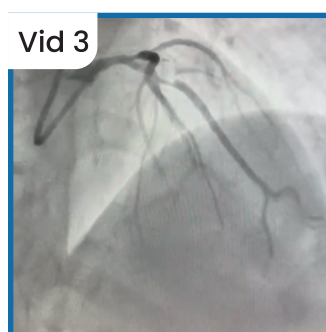
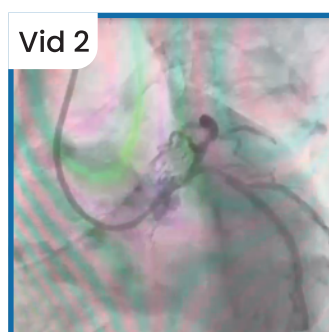
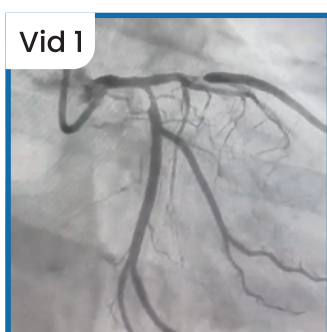
Left Main Bifurcation Stenosis (0,0,1): Many ways to Skin a Cat!

A 58 y diabetic female presented with crescendo angina. She had rest angina on admission with T wave inversion in V4–V6 and elevated TROP. Echocardiogram showed RWMA in Circumflex (LCx) territory. Her coronary angiogram revealed presence of critical lesions in proximal LAD and an ostio-proximal lesion (culprit) in LCx (Video 1,2,3 and Fig 1,2). The segment of LAD proximal to the lesion was smooth however it appeared smaller than the LAD segment distal to the lesion that was best appreciated in cranial view (Video 3). We decided to perform an IVUS study in order to decide the treatment strategy. IVUS of LAD revealed a critical lesion in proximal part (Video 4, Fig 3). The pre-lesion segment that appeared smooth (but a bit narrow) on angiogram had a non-obstructive plaque (2 o'clock to 9 o'clock position) all along its course upto the ostium and extending in the distal left main (Video 4, Fig 4,5). However the MLA of left main and proximal LAD were more than adequate (Fig 6,7).

There are multiple options to treat isolated ostial LCx lesion (Medina 0,0,1).

1. Leave it alone –OR–
2. Stent the discrete LAD lesion with a short stent and stent the LCx by nailing its ostium –OR–
3. Stenting the discrete LAD lesion with a short stent followed by crossover stenting from LM to LCx –OR–
4. Stent to LAD lesion and DCB to LCx –OR–
5. Treat this as a true distal left main bifurcation lesion (based on IVUS) and treat it by upfront two stents strategy.

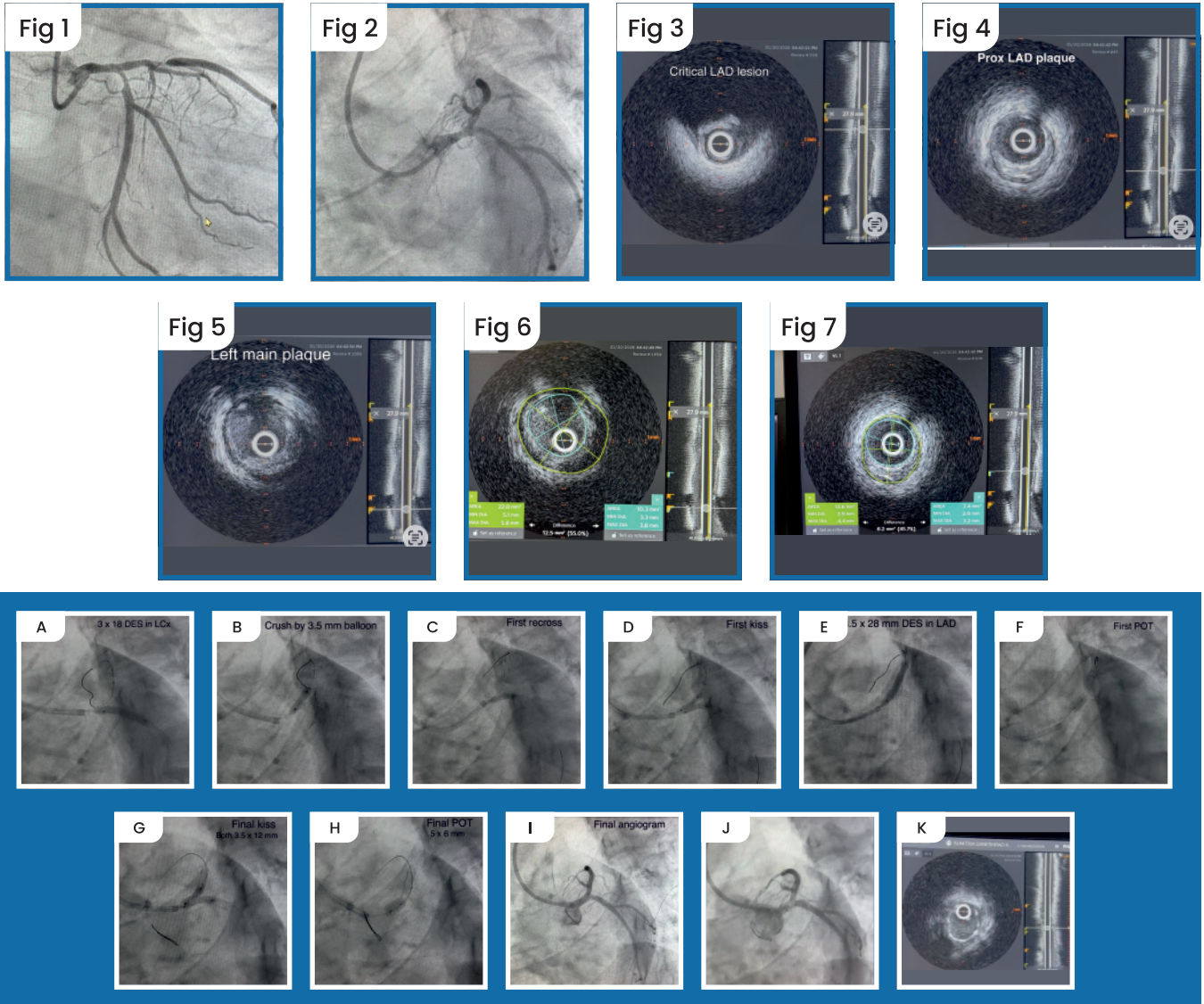
Option 1 was not considered in view of clinical setting of ACS and elevated Troponin. Nailing the LCx ostium (option 2) is always fraught with a risk of geographical miss and high restenosis rate. Drug coated balloon (DCB) (option 4) is an attractive option however randomised data with DCB in this subset of patients is lacking. Most evidence comes from retrospective registries, propensity-matched cohorts, or smaller observational studies. The short and medium term results in small cohorts of such patients is encouraging. Moreover carina shift is a real possibility with DCB option. A recent publication in Cath and cardiovascular interventions (ref 1) described a novel option of kissing balloon technique where a DCB is used in LCx and a perfusion balloon is used in LM–LAD. This allows prolonged inflation without hemodynamic compromise and also prevents carina shift.



The additional nuance in our present case is the IVUS study which showed evidence of non-obstructive disease in ostio-proximal LAD and distal left main. The implications of these IVUS findings are not known. A purist may change the class from (0,0,1) to (1,1,1) based on IVUS. And so did we. We treated this case with an upfront two stents strategy by using DK-crush technique (Steps shown in illustrations in Block A). We don't claim this to be the best option in this case but it is certainly one of the better options which covers the entire diseased portion with a stent, restores anatomy to near normal and has a good potential to offer good long term result.

References

1. Warisawa T et al : The First-in-Man Technique of Drug Eluting and Perfusion Therapy for Left Main Coronary Artery Disease. Catheter Cardiovasc Interv. 2025 106(2):978-987.



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