

1117 PCI in severe LM disease with mechanical support

Our case was a 81 years old lady who had history of diabetes, hypertension and hyperlipidaemia. She was admitted to our hospital on 17/6/2019 for sudden onset of chest pain. She also had heart failure in which required 4L O₂ to maintain her saturation. The initial ECG showed 1mm ST elevation at lead aVR and T wave inversion over anterior and lateral leads. The hsTnl was elevated and peaked at 24950ng/L. ECHO showed an impaired LVEF ~ 30-40% with global hypokinesia.

A diagnostic coronary angiogram was done on 20/6/2019 which showed ostial LM 60% stenosis with pressure damping with a 5F diagnostic catheter. The dLM bifurcation was also diseased with a 90% stenosis at the ostial LCx. The mid LAD was also 80% stenosed and the o/pRCA was a CTO with retrograde from the L side.

We decided to stop at this juncture and planned to consult Heart Team for the decision on CABG vs high risk multi-vessels PCI. However, the patient developed cardiogenic shock and acute pulmonary edema 2 days after coroangiogram and required urgent endotracheal intubation, mechanical ventilation and high dose inotropic support. We urgently consulted the cardiothoracic surgeon and replied that the case was not a surgical candidate. So after getting consents from the patient's relatives, we proceeded to emergency PCI.

We believed the culprit for the deterioration was the ostial LM and LAD lesions (which also supply the retrograde to the RCA) and hence we aimed at restoring the LM / LAD blood flow. We also believed that performing LM bifurcation stenting at this juncture was too risky and hence we decided to leave it to a second stage. We inserted IABP via the left femoral artery. A 7F JL4 guiding catheter was inserted via the right femoral artery and tried not to deep engage into the LM due to the ostial lesion. A gentle contrast injection showed TIMI 2 flow in the LM/LAD. The LAD was wired quickly and POBA to the oLM with a 2.5 balloon and then stented the ostial LM with a Xience Sierra 4.0x12. The mLAD was also stented with an Onyx 2.75x26. IVUS showed good stent apposition in both the LAD and LM stents.

The haemodynamics improved after the procedure. She was transferred back to CCU and able to wean off ventilator and IABP over a few days time. However, the BP was still on the low side and required inotropic support. We decided to use Impella CP as a form of mechanical support for the second stage PCI to the LM bifurcation.

The second stage PCI was performed 5 days after the first procedure. An Impella CP was inserted via the left femoral artery into the left ventricle. An 7F EBU 3.5 guiding catheter was inserted via the right femoral artery and engaged into the LM without pressure damping. We planned a Culotte stenting to LM bifurcation. The ostial LCx was first predilated and then stented with an Onyx 3.5x18. The patient developed transient PEA arrest during LCx stenting. Her cardiac output was maintained by the Impella with a mean BP around 30mmHg. No external cardiac massage was required and her spontaneous circulation was returned upon deflating the stent balloon. The LM-LAD was then stented with an Onyx 3.5x18. The LM was POT with 4.0 high pressure balloon. The final angiography showed a TIMI 3 flow in the LCA with good retrograde flow from the LAD to the RCA.

The patient had a satisfactory recovery after the procedure with no chest pain and out of heart failure. She was put on cardiac rehabilitation exercise and later discharged from our hospital.