

1002 Diffuse, Tortuous, and Calcified LAD Lesion Treated by Rotablation and Extension Catheter; Complicated by Dissection with Bail-out PCI; and Post-Intervention IVUS

The patient is a hypertensive with recurrent episodes of angina and shortness of breath of several months duration. Echocardiogram showed hypokinesia of the entire septum and inferolateral wall with depressed ejection fraction. He was subsequently referred for elective cardiac catheterization. Fluoroscopy showed mild to moderate calcifications in the proximal to mid LAD. Coronary angiography using 5F Tiger catheter via right radial arterial access revealed the following results: left main patent; LAD with an 80% ostioproximal segment stenosis with a complex lesion suggestive of a recently ruptured plaque, followed by a tortuous 99% mid segment stenosis straddling D1 and a tortuous 80-90% distal stenosis, D1 is a good-sized branch with a 90% proximal stenosis and post-stenotic aneurysmal dilation; LCX with a 99% mid segment stenosis after OM1, followed by an 80% distal segment stenosis, OM1 is good-sized and branching with an 80% proximal stenosis in OM1a, 90% ostioproximal stenosis in OM1b, and 99% ostioproximal stenosis in OM1c; RCA has luminal irregularities, PLA is totally occluded with retrograde flow from LAD collaterals, PDA is totally occluded at its mid with collateral flow from RV marginal branch. After consent for PCI was made, we cannulated the left main using a 6F EBU3.5 guide catheter. An Asahi Sion Blue coronary guidewire was distalized to the LAD. We attempted to wire D1 using an Asahi Sion, but we cannot negotiate beyond the post-stenotic aneurysmal dilation. Predilation of the tightest lesion in the mid LAD was done using Emerge 1.5x20 mm at 18 ATM and NC Quantum 2.0x20 mm in the proximal to mid LAD at 20 ATM. Because of the tortuosity of the segment, we used a 6F Guidezilla 2 catheter to facilitate entry of equipments to the vessel. Further predilation of the proximal to mid LAD was performed using NC Quantum 2.5x20 mm at 16-22 ATM. Additional attempts to wire D1 was made using Grandslam and Miracle 3, but we cannot pass beyond the aneurysm. A NC Quantum 2.75x20 mm was used to further predilate the proximal to mid segment at 16-18 ATM. However, the lesion was undilatable, and we opted to perform rotablation. At this time, the patient's arterial pressures began to decrease despite fluid resuscitation. We hooked the patient on inotropic support and decided to insert first an 8F IABP device prior to the rotablation. Using a 2.6F Caravelle microcatheter, we exchanged the Asahi Sion Blue to a Rotawire Floppy and performed rotablation of the proximal to mid LAD using a 1.5 burr at rotational speeds of 180,000 rpm at 20-second runs. After rotablation, additional predilation of the segment was done using NC Quantum 2.75x20 mm at 18 ATM. Using the 6F Guidezilla, we attempted to position with difficulty a Synergy 3.0x28 mm stent in the mid to distal LAD. After several attempts, we cannot position the stent beyond the tortuous distal stenosis. We then opted to deploy the stent in the mid LAD at 11 ATM, with post-dilation using the same stent balloon at 16 ATM. We then attempted to position another stent distal to the first stent by deeply cannulating the Guidezilla, but failed. Additional post-dilation of the first stent to distal LAD was done using NC Quantum 2.5x8 mm at 12-25 ATM, NC Quantum 3.0x20 mm at 16 ATM, and NC Quantum 3.75x12 mm at 12-14 ATM. While attempting to position a second stent distal to the first stent, we noted a Grade D coronary dissection in the proximal LAD, most likely due to repeated trauma from the Guidezilla and entry of several equipments. We immediately performed bail-out stenting of the dissected proximal LAD using Synergy 3.5x32 mm stent. Because we cannot further position the stent to overlap the first stent, we decided to deploy the stent to cover the dissection in the proximal LAD, leaving an unstented gap in the mid LAD. After noting resolution of the dissection post-stent deployment, we performed additional post-dilation of the distal LAD using NC Quantum 3.0x15 mm at 12-18 ATM. The ostioproximal LAD was likewise predilated using NC Quantum 3.75x12 mm at 12-18 ATM. A Synergy 4.0x24 mm stent was positioned and deployed in the left main to ostioproximal LAD overlapping the second stent at 15 ATM. A NC Quantum 2.75x15 mm was used to further predilate the unstented gap between the first

and second stents at 12 ATM. A third Synergy 2.5x16 mm stent was positioned and deployed in the distal LAD overlapping the first stent at 16 ATM, with post-dilation using the same stent balloon at 18 ATM. Finally, a fourth Synergy 3.5x12 mm stent was positioned and deployed in the unstented gap in the mid LAD between the first and second stents at 16 ATM, with post-dilation using the same stent balloon at 20 ATM. We performed IVUS post-stent deployment of the left main to LAD, which showed the following parameters: distal LAD MSA 4.8 mm², mid LAD MSA 6.5 mm², proximal LAD MSA 9.9 mm², ostial LAD MSA 8.6 mm², distal left main MSA 11.1 mm². The unstented proximal left main has a MLA of 23.4 mm². Post-angioplasty/DES of the left main to LAD showed well-apposed stent struts on IVUS, <5% residual stenosis, no evidence of perforation or dissection, with TIMI 3 flow. After the procedure, the arterial pressures recovered, the inotropic support was subsequently decreased, and the patient was transferred to the ICU stable.