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A case of CHIP intervention for a super-old patient with NSTE-ACS and heart failure.

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A 91-year-old female patient had a history of primary percutaneous coronary intervention (PCI) for inferior myocardial infarction(MI) in another hospital one year ago. At that time, severe calcified stenoses had been observed in the mid-LAD and ostial LMT. Six months later, she was hospitalized due to heart failure, her echocardiography showed severe hypokinesis in the anterior wall of the left ventricle. It was suspected that the LAD was occluded, but no additional PCI was performed because she was the super-elderly. One year after first MI, she presented with severe chest pain and was hospitalized for non-ST-elevation Acute Coronary Syndrome (NSTE-ACS) and worsening heart failure. Her echocardiography showed severe hypokinesis from the mid to apical anterior wall with an ejection fraction of 55%. The coronary angiography revealed total occlusion of mid LAD, severe stenosis at ostial LMT. Collaterals to LAD were observed from RCA. Dobutamine stress echocardiography proved the viability of anterior wall.

Based on the heart team's discussion and her wishes, we decided to perform PCI for both LAD-CTO and ostial LMT. We first inserted Intra-Aortic Balloon Pumping (IABP) via left femoral artery, because shock was expected during the procedure. We engaged 7Fr JL3.5 ST guiding catheter into LCA via right femoral artery. We inserted Sion blue wire into diagonal branch, and IVUS catheter to get intravascular image. IVUS image showed the calcified nodule at the ostium. We performed rotational atherectomy for the ostium of LMT with 2.0mm burr. The guiding catheter was stabilized, so we moved on to the CTO-PCI. We prepared contralateral injection from RCA using 5Fr diagnostic catheter via left radial artery. We tried to cross XT-R wire supported by Caravel microcatheter antegradely, but those didn’t work. Subsequently, We exchanged the wire to Gradius EX, and were able to puncture the entry of CTO. However, We couldn’t get the CTO exit. We dilated the entry of CTO using small balloons (Sapphire3 1.0×10mm, Ryurei2.0×10mm) to introduce the IVUS catheter. IVUS findings revealed that the wire was in the true lumen at the CTO exit, and that the wire went into the subintimal space at distal part of the exit. After the IVUS confirmation, we were able to insert Sion wire into the distal LAD. We performed rotational atherectomy to CTO lesion with 1.5mm burr. After implantation of a drug-eluting stent (Synergy 2.5×16mm) at CTO lesion, We performed post-dilation with a non-compliant balloon(Hiryu Plus 2.75×6mm). We also expanded ostial LMT with Hiryu Plus 2.75×6mm. IVUS findings showed that ostium had enough lumen area and no flow-limiting dissections, so we finished the procedure with a drug-coated balloon(Sequent Please 4.0×15mm).

After PCI, her symptoms disappeared. Three months later, her echocardiography showed improvement of anterior wall motion, coronary angiography also showed good outcomes. In some cases, PCIs were still effective strategies for super-elderly. We can not only relief the elderly patients from chest symptoms, but also save medical costs from repeated hospitalizations. We should not avoid PCI simply because they are old.