1055 **Successful PCI for LCX CTO Complicated by Severe Calcification with Difficulty Advancing Microcatheter**

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An octogenarian male with three-vessel disease had previously undergone percutaneous coronary intervention (PCI) to right coronary artery (RCA) #1, but suffered repeated in-stent restenosis. In months Y-9 of year X, he was treated with Intravascular Lithotripsy and drug-coated balloon (DCB). The CTO of the proximal left anterior descending artery and 90% stenosis of left circumflex artery (LCX) remained. Later that year, he presented with exertional chest discomfort and dyspnea. Coronary angiography showed no significant progression of RCA #1 stenosis, but complete occlusion of the previously 90% stenotic LCX ostium #11.

On day 8 of hospitalization, PCI for LCX was performed under intra-aortic balloon pumping support. Attempts to cross the lesion with XT-R and Runthrough Izanai were unsuccessful because of the branching angle of LCX and severe stenosis of distal left main coronary trunk. To secure working space, initial predilatation with a 2.0 mm NC balloon was inadequate, but further dilation with a 2.75 mm balloon enabled crossing of #11 with Corsair XS + XT-R under IVUS guidance. Although changing to FLEXI wire and Runthrough Izanai allowed advancement of the wire, the microcatheter could not pass the lesion. Both the 2.0 mm and 2.75 mm balloons ruptured during repeated predilatation. Finally, the Zizai was advanced to the distal LCX with the XT-R and Izanai buddy wire, followed by dilating the lesion with a 1.0-mm balloon. Due to severe calcification preventing intravascular ultrasound (IVUS) passage, rotational atherectomy using a 1.25 mm burr was performed, enabling IVUS observation, which confirmed good wire bias. Further debulking with a 1.75 mm burr was completed, followed by balloon dilatation with a 3.0 mm balloon from mid to proximal LCX. A DCB was applied to mid LCX, and a drug eluting stent was deployed from left main trunk to LCX. After proximal optimization technique and guide wire re-crossing into the LAD, kissing balloon inflation was attempted, but simultaneous passage of balloons into LAD and LCX was not possible; therefore, alternative sequential dilatations were performed to complete the procedure.

Predilatation of the lesion to secure working space allowed successful wire manipulation when initial crossing attempts failed. Additionally, the combination of the flexible XT-R shaft and the trackable Zizai microcatheter facilitated microcatheter advancement through the heavily calcified and tortuous segment, enabling effective lesion modification with rotational atherectomy. Device selection and strategy were discussed in the context of relevant literature.