

1122 **Successful Bailout of Left Circumflex Flow Compromise Using the Reverse Wire Technique During IVL-Assisted PCI for a Severe Calcified Left Main Bifurcation Lesion**

Shun Fujii¹

Tomonori Miyabe¹, Yuya Mitsuhashi¹, Toshiaki Isobe¹, Kazuho Kamishima¹

¹ Cardiology, Tokyo Metropolitan Tama Medical Center, Japan

An 80-year-old woman receiving maintenance hemodialysis underwent coronary angiography for evaluation after heart failure treatment, which revealed three-vessel coronary artery disease with true left main (LM) bifurcation lesion. Elective PCI was performed for the LM bifurcation lesion. Intravascular ultrasound (IVUS) demonstrated severe circumferential calcification extending from the LM body to the bifurcation. Lesion preparation was performed using scoring balloons followed by intravascular lithotripsy (IVL), which successfully produced calcium fractures confirmed by IVUS. A drug-eluting stent (DES) was implanted from the LM to the left anterior descending artery (LAD) using a crossover technique, while the left circumflex artery (LCX) was initially treated with a drug-coated balloon because angiography suggested only a limited type B dissection.

Following crossover stenting, rewiring of the LCX entered the false lumen, resulting in complete loss of LCX flow. By switching to a polymer-jacketed guidewire and applying the reverse wire technique with a dual-lumen microcatheter, successful re-entry into the true lumen was achieved. IVUS confirmed true lumen passage and demonstrated persistent dissection compromising coronary flow. Therefore, bailout DES implantation to the LCX was performed, achieving complete coverage of the dissection. Final angiography demonstrated TIMI 3 flow in both branches with satisfactory IVUS findings. IVL facilitated treatment of a severely calcified LM bifurcation lesion; however, bailout management was required because of LCX dissection and false-lumen rewiring. The reverse wire technique enabled successful true-lumen re-entry and completion of an optimal two-stent strategy, highlighting its value as an important bailout technique for complex LM bifurcation PCI.