

1103 **A Case of Heavily Calcified Triple-Vessel Disease With Two CTOs Successfully Treated Using GP-Lock, Dual-Prep, and Other Techniques**

Kazunori Yamaji¹

Shuhei Kawasaki¹, Taro Katsuki¹, Takumi yoshiga¹, Masaharu Nakano¹, Takashi Ishimatsu¹, Masahiro Sasaki¹,
Naoki Itaya¹, Takaharu Nakayoshi¹, Yoshiaki Mitsutake¹, Yoshihiro Fukumoto¹

¹ Cardiovascular medicine, Kurume University Hospital, Japan

A man in his 80s was referred to a cardiologist after an electrocardiographic abnormality was detected during a routine examination. Further evaluation revealed moderate aortic stenosis and heavily calcified triple-vessel coronary artery disease, including CTOs of RCA and LCx. He was referred to our institution for further management.

Combined coronary artery bypass grafting and surgical aortic valve replacement was initially considered. However, preoperative assessment indicated a high risk associated with general anesthesia. We therefore planned staged PCI to achieve complete coronary revascularization, with transcatheter aortic valve implantation reserved for future progression of aortic stenosis.

In the first session, stentless PCI was performed under IABP support for the LAD, which was the only remaining patent vessel.

In the second session, antegrade wire escalation successfully crossed the LCx CTO. However, severe calcification prevented the passage of balloons and other devices. Application of the GP-lock technique provided sufficient support and enabled device delivery and subsequent lesion preparation.

In the third session, the RCA CTO was crossed using a retrograde wire escalation strategy. Because extensive calcification required aggressive plaque modification, rotational atherectomy was initially performed. Considering the coexistence of aortic stenosis and the potential hemodynamic consequences of prolonged atherectomy, additional calcium modification was achieved using intravascular lithotripsy as a Dual-Prep strategy. The RCA PCI was then successfully completed.

Additional LCx revascularization was performed in the fourth session, ultimately achieving complete revascularization of all three coronary territories.

We experienced a challenging case in which both the treatment strategy and the sequence of revascularization required careful consideration. This case highlighted the need for a multifaceted and staged approach to heavily calcified multivessel disease involving CTOs.