A case of retrograde PCI with Intravascular Lithotripsy for RCA In-Stent CTO

C-07

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A 64-year-old male with a history of coronary artery disease underwent multiple PCIs. Initially treated at age 46 with BMS placement in LAD#6 for unstable angina. At age 60, received DES in RCA#2 for angina, followed by DES in RCA#4AV for acute MI seven months later. During follow-up, he developed chest symptoms. Coronary angiography revealed complete occlusion from RCA#2 stent to distal vessel. Initial antegrade PCI approach failed. Subsequent retrograde approach was attempted using septal collaterals. Antegrade wiring with intermediate wire successfully crossed to stent distal end. Retrograde angiography showed occlusion from #2 stent to #3. Retrograde approach via first septal branch using Suoh03 guidewire successfully crossed the channel. Microcatheter advanced and wire exchanged to SION black guidewire. Reverse CART technique successfully guided SION black guidewire into stent. Guide extension catheter advanced antegradely, achieving externalization. Balloon dilatation performed, but IVUS revealed poor stent expansion due to severe calcification. High-pressure balloon inflation failed to expand stent adequately. Intravascular lithotripsy (IVL) was performed with 60 pulses, achieving successful expansion. Final stent placement from #2 stent periphery to #3 using Drug Everolimus-Eluting Stent showed excellent expansion. While IVL efficacy and safety are established for calcified lesions, its utility for balloon-resistant stent treatment remains largely unknown. This case demonstrates IVL's effectiveness for expanding balloon-resistant stents, warranting further investigation.