

1051 **Successful retrieval of an entrapped rotational atherectomy burr using intravascular lithotripsy from false lumen**

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Clinical Information

A 68-year-old woman presented with acute decompensated heart failure, which improved after diuretic therapy. Baseline evaluation demonstrated moderately impaired renal function and an elevated BNP level.

Angiographic Findings

Coronary angiography revealed severe calcified stenosis of the right coronary artery (RCA), with 75% stenosis in the proximal RCA and 90% stenosis in the mid RCA. Previously implanted stents in the left anterior descending artery were patent. PCI was performed via a 7 Fr femoral approach using an AL 1.5 guiding catheter. A floppy guidewire successfully crossed the lesion, and intravascular ultrasound (IVUS) demonstrated near-concentric calcification in the proximal RCA and eccentric calcification distally.

Intervention

Rotational atherectomy (RA) was initiated using a 2.0-mm burr in Dynaglide mode. During advancement, the burr became entrapped within dense concentric calcification in the proximal RCA, and forceful traction failed to retrieve it.

After removal of the RA drive shaft sheath, parallel wiring using XTA, Sion Black, Gladius, and Conquest Pro 12 guidewires was unsuccessful. A high-tip-load polymer-jacketed guidewire (Jupiter S6, Boston Scientific) was advanced into the false lumen. Balloon dilation with a 2.0-mm balloon at 6 atm from the false lumen failed to release the burr. IVUS demonstrated that the burr was compressed by circumferential calcium.

False-lumen intravascular lithotripsy (IVL) was subsequently performed using a 2.5 × 12 mm Shockwave IVL balloon, delivering 80 pulses. Following IVL, the burr was successfully retrieved with gentle traction without vessel perforation. Plaque modification was then completed using orbital atherectomy, followed by a 3.0 × 10 mm Wolverine cutting balloon and implantation of a 3.5 × 48 mm Synergy XD drug-eluting stent.

Final Result

Final angiography demonstrated TIMI grade 3 flow with optimal stent expansion. Final IVUS confirmed excellent stent expansion without procedural complications.

Discussion

Burr entrapment is a rare but potentially catastrophic complication of rotational atherectomy. When conventional retrieval techniques fail, emergency surgery is often considered but carries substantial risk. In this case, false-lumen intravascular lithotripsy created calcium fractures that facilitated successful burr retrieval while avoiding vessel injury. This technique may represent a feasible bailout strategy for burr entrapment in severely calcified coronary lesions.