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A 58-year-old man presented with a 2-day history of loss of appetite and hypotension without chest pain. His medical history included hypertension, diabetes mellitus, and end-stage kidney disease on hemodialysis. Blood pressure was 85/55 mmHg, heart rate was 50 beats/min, and electrocardiography showed ST-segment elevation in leads II, III, and aVF with reciprocal depression in leads aVL and V1–V4. Echocardiography revealed inferoposterior wall akinesis with a left ventricular ejection fraction of 35%.

Emergency coronary angiography via the right femoral artery revealed an occlusive lesion with a calcified nodule and overlying thrombus in the mid-right coronary artery. A SION blue guidewire crossed the lesion, but neither the IVUS catheter nor the aspiration catheter could cross. Lesion modification was performed with a 2.0 × 10 mm KISASHI cutting balloon followed by a 2.5 × 10 mm Wolverine cutting balloon. TIMI 3 flow was restored; however, distal coronary perfusion remained poor because of distal embolization. An intra-aortic balloon pump (IABP) was inserted, and continuous intravenous unfractionated heparin was started.

Repeat coronary angiography 2 days later demonstrated thrombus resolution and TIMI 3 flow to the distal vessel. The IABP was removed, and staged PCI was performed 1 week later. Approaching via the right femoral artery, an 8Fr guiding sheath was inserted, and a SION blue guidewire was passed through the lesion. After OFDI evaluation, the guidewire was exchanged for a RotaWire Floppy. Rotational atherectomy was performed with 1.75-mm and 2.25-mm burrs, followed by dilation with 3.5 × 10 mm and 3.75 × 10 mm Wolverine cutting balloons and a 3.5 × 20 mm drug-coated balloon.

This case demonstrates that a staged PCI is an effective strategy for STEMI caused by a calcified nodule.