

1045 **Directional Coronary Atherectomy for a Calcified Nodule After Inadequate Lesion Modification Despite the ARCADIA Technique**

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Case Presentation

A 61-year-old man was referred to our department because of resting chest pain and ECG abnormality. CAG was performed because cardiac CT suggested calcified coronary lesions. It revealed severe stenosis in the mid-RCA and a CTO of the proximal LAD. PCI was performed for the mid-RCA on the same day.

OCT demonstrated a calcified nodule (CN) protruding toward the atrial side, so aggressive lesion modification was planned. Because the lesion was eccentric and wire bias was unfavorable, the ARCADIA technique was used to penetrate the CN with a guidewire. However, plaque modification remained insufficient; therefore, sequential rotational atherectomy with 1.5- and 2.0-mm burrs was performed, followed by DCB angioplasty. A staged intervention was planned thereafter.

Two months later, a second session was performed. Additional rotational atherectomy with 2.25-mm burr was performed; however, adequate lesion modification could not be achieved even after burr upsizing. Therefore, we selected DCA to intentionally orient the cutter toward the CN. Tip detection was used to confirm that the CN was located on the myocardial side. Directional atherectomy was performed toward the myocardial side using an ATHEROCUT MK2 (L9 mm), and debulking of the calcified plaque was achieved. IVUS confirmed substantial debulking of the CN and adequate lumen enlargement. Balloon dilatation was subsequently performed, followed by DCB angioplasty, and the procedure was successfully completed.

Discussion

Rotational atherectomy is highly dependent on wire bias and may fail to adequately modify eccentric calcified nodules despite the use of advanced wiring techniques, such as the ARCADIA technique. In such situations, DCA enables intentional directional plaque excision and may achieve effective debulking of residual calcified nodules.