1158 **Combined Rotational Atherectomy and Directional Coronary Atherectomy for the Treatment of a Calcified Flap**

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Background:

The directional coronary atherectomy (DCA) allowed more effective debulking of the lesion to prevent plaque shift, side branch occlusion, and achieve greater minimal lumen diameter. Therefore, it has been reported the benefit for left main trunk (LMT) bifurcation lesions. However, the weak point of the DCA is heavy calcified plaque. We report a case in which rotational atherectomy (RA) facilitated successful DCA by modifying a calcified intimal flap that developed during the procedure.

Case Summary:

A man in his 70s with a history of non-ST elevation myocardial infarction underwent percutaneous coronary intervention with implantation of a 2.5 x 38 mm SES in the LAD one year prior. He was admitted for revascularization of a residual 75% stenosis extending from the LMT to the LAD. Intravascular ultrasound (IVUS) revealed a fibrous plaque located epicardial aspect within the LMT, a 270° arc of calcified plaque at the LMT bifurcation, and a mixed plaque morphology in the LAD ostium-characterized by calcification between the slightly clockwise from epicardial aspect and fibrous tissue at septal side.

Initial DCA was performed using a 9-mm ATHEROCUT L device, targeting the fibrous plaque at LMT to calcified plaque at the bifurcation. During the first session of DCA, the cutter was entrapped by the calcified plaque and we were forced to withdraw the device. IVUS revealed a calcified intimal flap, seemed to resulting from partial detachment of the calcified component. As this flap could not be removed by DCA, RA was employed to debulking the calcified flap. Subsequently, the flap was successfully in thinning using 2.0 mm and 2.25 mm burrs. Additional DCA was resumed with inflation pressure at 40 psi and 60 psi, resulted in removal of the flap. Following confirmation of lumen gain by IVUS, a 3.0×15 mm cutting balloon and drug-coated balloon was applied.

Conclusion:

In complex ostial lesion with mixed plaque morphology, as demonstrated in this case, RA can serve as an effective adjunctive strategy to facilitate DCA. This case highlights a potential therapeutic approach for achieving optimal plaque modification in calcified and fibrous ostial lesions.