1142 **Effective Dual Atherectomy Approach: Combined Rotational and Orbital Atherectomy for Severely Calcified Coronary Lesions in a High-Risk Dialysis Patient.**

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Background: End-stage renal disease patients on maintenance hemodialysis frequently present with severe coronary artery calcification, necessitating meticulous lesion preparation during percutaneous coronary intervention (PCI). Adequate plaque modification is crucial for optimal procedural outcomes in this high-risk population. We report a case where the combined use of rotational atherectomy (Rotablator) and orbital atherectomy system (OAS, Diamondback) achieved favorable clinical outcomes in a dialysis patient with severely reduced left ventricular function and multivessel disease.

Case Presentation: An octogenarian male on maintenance hemodialysis presented with chest pain and hypotension during dialysis. Echocardiography revealed severely reduced left ventricular ejection fraction (LVEF) in the 30% range. Coronary angiography demonstrated triple-vessel disease with a 99% stenotic lesion in the proximal right coronary artery characterized by severe calcification. Given the patient's high surgical risk profile, percutaneous coronary intervention was selected as the preferred revascularization strategy over coronary artery bypass grafting.

Procedural Details: PCI was performed on the right coronary artery lesion. Initial attempts to advance microcatheters and small-diameter balloons were unsuccessful due to severe calcification. A RotaWire Floppy was successfully crossed directly, and rotational atherectomy was performed using a ROTAPRO 1.5mm burr for debulking. However, intravascular imaging revealed persistent circumferential calcification (approximately 270 degrees) and residual calcific nodules. Considering the patient's compromised left ventricular function and multi-vessel disease, along with the potential risk of distal embolization from further debulking procedures, additional plaque modification using OAS was undertaken to minimize particulate debris generation.A total of six ablation passes were performed, and intravascular imaging confirmed adequate ablation effects on the calcified segments. Following pre-dilatation with a scoring balloon, intravascular imaging demonstrated multiple crack formations and luminal expansion. Final stent deployment was successfully achieved with excellent angiographic results.

Conclusion: The combined use of rotational atherectomy and orbital atherectomy system represents a safe and effective treatment strategy for severely calcified coronary lesions in patients with reduced left ventricular function. This dual-device approach enables comprehensive lesion preparation while minimizing the risk of slow-flow phenomena, potentially improving procedural safety and efficacy in this challenging patient population.