

1115 **Ultra-Early In-Stent Restenosis Suggestive of an Eruptive Calcified Nodule Two Months After Dual Lesion Preparation: IVUS Findings Before and After Excimer Laser Coronary Atherectomy**

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A man in his seventies undergoing maintenance hemodialysis presented with unstable angina. Coronary angiography revealed a severely calcified lesion in the right coronary artery (RCA) and significant stenosis in the left anterior descending artery (LAD). The RCA was identified as the culprit vessel and treated with dual lesion preparation using rotational atherectomy followed by intravascular lithotripsy. A drug-eluting stent was subsequently implanted, achieving satisfactory stent expansion. Staged percutaneous coronary intervention (PCI) for the LAD lesion was planned.

Two months later, the patient developed recurrent chest pain. Coronary angiography demonstrated progression of the untreated LAD lesion, and PCI was initially planned for the LAD. However, angiography of the previously treated RCA unexpectedly revealed severe in-stent restenosis (ISR). Based on the clinical and angiographic findings, the RCA ISR was considered the culprit lesion, and PCI was therefore performed on the RCA.

Intravascular ultrasound (IVUS) revealed an irregular, protruding intrastent mass with an ambiguous morphology. Given the patient's hemodialysis status, the ultra-early development of ISR, and the intravascular imaging findings, an eruptive calcified nodule (ECN) was considered the most likely underlying mechanism. Excimer laser coronary atherectomy (ELCA) was performed, resulting in marked angiographic improvement. IVUS after ELCA clearly demonstrated modification of the protruding intrastent lesion.

Hemodialysis patients are at increased risk of calcified nodule-related adverse events, including early ISR. Despite extensive lesion preparation and satisfactory stent expansion achieved using dual lesion preparation, ECN-related ISR developed within only two months in this patient. Although attention was initially focused on progression of the untreated LAD lesion, the actual culprit was ultra-early RCA ISR. This case highlights the importance of maintaining a high index of suspicion for early ISR in hemodialysis patients, even after apparently optimal PCI. It also demonstrates the morphological changes induced by ELCA, as clearly visualized by IVUS. We discuss the potential mechanisms of ultra-early ISR in hemodialysis patients and therapeutic strategies for ECN-related ISR.