Progression of a Calcified Nodule Causing Acute Myocardial Infarction in a Patient on Hemodialysis — Serial Optical Coherence Tomography —

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A 67-year-old man who had started maintenance hemodialysis 16 years previously due to immunoglobulin A nephropathy was admitted for ST-elevation myocardial infarction (STEMI). He had undergone optical coherence tomography (OCT)-guided stenting of the distal right coronary artery (RCA) 16 months earlier, and then follow-up OCT 8 months after that. Emergency coronary angiography showed total occlusion of the proximal RCA (Figure A). The culprit lesion was treated with stenting after thrombectomy (Figure B). OFDI performed after thrombectomy showed a thrombus overlying a calcified nodule (CN; Figure E1-3). Previous OCT/OFDI showed a gradual increase and protrusion into the vessel lumen of the CN (Figure C1-3, D1-3).

CN is a possible cause of acute coronary syndrome (ACS) and is pathologically defined as a lesion with fibrous cap disruption and thrombi associated with eruptive, dense, and calcific nodules. OCT has confirmed CN in 8% of ACS patients. The etiology of CN-caused ACS, however, remains unclear. This report clearly showed serial changes and progression in the CN on OCT before STEMI onset, providing insights into the pathophysiology of CN-caused ACS.

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Disclosures
The authors declare no conflict of interest.

References