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In Stent Restenosis Caused by Calcified Nodule 11 years after Paclitaxel Eluting Stent Implantation

Background: Calcified nodule may be one of the factors associated with in stent restenosis (ISR). Optical coherence tomography (OCT) is a valuable tool to identify the cause of ISR. Case: An 82-year-old man with dyslipidemia, diabetes mellitus and chronic kidney disease was admitted to our hospital for heart failure. He was treated with 3 paclitaxel eluting stents in the proximal and mid-right coronary artery for silent myocardial ischemia 11 years ago. Coronary angiography (CAG) revealed ISR in the mid-RCA. On the first session, neither a 1.0mm balloon nor imaging device would cross the lesion. Rotational atherectomy (RA) with a 1.5-mm burr was performed on a second session. OCT image of the ISR lesion after RA demonstrated circumferentially convex lesion with high-backscatter and signal attenuation. Intravascular ultrasound (IVUS) image of the ISR lesion showed severe calcification with a "napkin-ring" appearance. There were no signs of stent underexpansion or stent fracture. Since the long axis view of OCT image revealed that the calcified nodule was continuously present from the distal of the culprit lesion and IVUS images showed calcification, we concluded that calcified nodule was the cause of ISR. The lesion was dilated with a 3.0/20 drug coated balloon. Final CAG showed an acceptable result without flow limitation. Conclusion: The combined use of OCT and IVUS may be helpful for diagnosing calcified nodule as an underlying cause of ISR.