

Evaluation of In-stent Restenosis Using CLEARstent

Courtesy of Prof. Holger Nef, MD

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Patient History

A 67-year-old patient presented with acute coronary syndrome. ECG shows no irregularities. The serum level of Troponin was 0.16 pg/ml. Cardiovascular risk factors were hypertension, diabetes type 2, hyperlipoproteinemia and current smoker. He has status post PCI (drug-eluting stent 3.0/38 mm) of the RCA three years ago. His concomitant diseases were chronic renal failure and rheumatism. For ongoing angina pectoris re-evaluation angiography was considered.

Diagnosis

Coronary 3-vessel disease with high-grade in-stent restenosis in the right coronary artery.

Treatment

Wiring of the right coronary artery and predilation with non-compliant balloon (NC Trek 3.0/15 mm) in the ostial and mid-part of the stent. Using CLEARstent technology a clear stent fracture was visible. Thus, mid-part of the RCA was treated with a drug-eluting stent 3.0/12 mm.

Comments

CLEARstent facilitates the visualization of the stent and unmasked a stent fracture in the distal part of the RCA stent. Coronary stent fracture is a relatively uncommon and rare complication of stent implantation. The reported incidence of stent fracture among drug-eluting stents ranges from 1 % to 8%. The technical challenge of detection can be easily overcome by using CLEARstent to unmask this pathology without the need for intravascular imaging such as IVUS or optical coherence tomography. Therefore procedure time and amount of contrast dye can be reduced.

Taking into account that the adequate therapy for in-stent restenosis is treatment with a drug-coated balloon, the use of CLEARstent can change the therapeutic strategy. Stent fractures have to be stented to prevent development of restenosis.

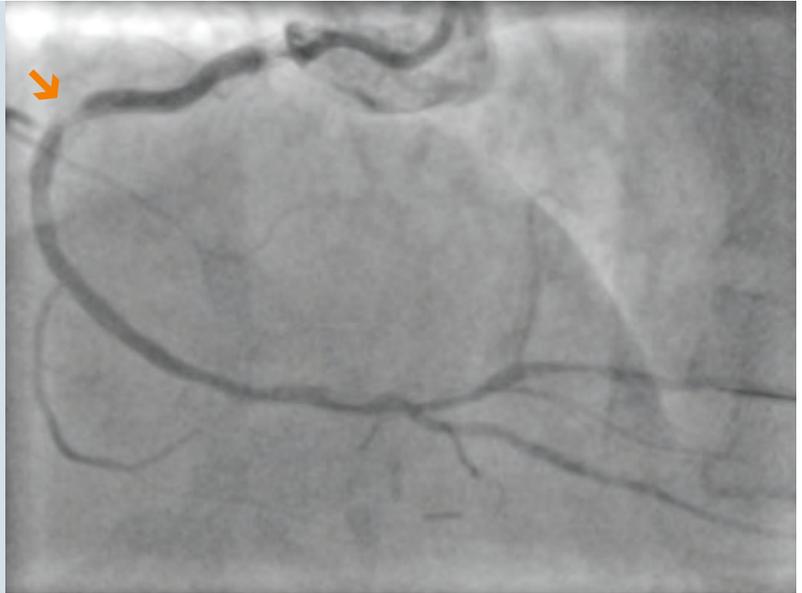
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- 1 Angiography of the right coronary artery shows in-stent restenosis in the ostial and distal part.



- 2 Acquisition of the right coronary artery without contrast documenting a stent in the proximal part.



- 3 CLEARstent enhances the cause of in-stent restenosis, unmasking a stent fracture in the distal part of the implanted stent.

