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Acute thrombosis and intravascular ultrasound guidance treatment of a mesh covered stent.

Authors:
R Padron¹, I Pascual¹, A Alperi¹, P Avanzas¹, C Moris¹, ¹University Hospital Central de Asturias - Oviedo - Spain,

Topic(s):
Acute Coronary Syndromes: Treatment, Revascularization

Citation:
A 67-year-old male, hypertensive, diabetic on oral treatment, dyslipidemic and former smoker, was admitted for an oppressive 45-minutes duration chest pain and a transient ST-elevation in the inferior leads that solved after sublingual and intravenous nitroglycerine. The elective coronaryography performed showed a left coronary free of significant lesions and a right coronary with a proximal acute severe lesion with non-occlusive high thrombus burden and thrombolysis in myocardial infarction (TIMI) 2 distal flow (figure 1). Trying to trap and exclude the abundant remnant thrombus, a non-drug-eluting micronet covered stent, MGuard Inspire MD 3.5 x 18 mm, was implanted at 12 atmospheres (figure 2b), with good angiographic result (figures 3a and 3b). The patient was discharged on treatment with acetylsalicylic acid, clopidogrel and the rest of standard treatment. Fifteen days after, the patient returned to the emergency room with an episode of squeezing chest pain at rest. There were no electrocardiographic abnormalities and a little movement of markers of myocardial necrosis was observed (peak troponin I 0.12 ng/ml and normal creatinine phosphokinase).

A new coronaryography was performed 12h after his admission. The angiography revealed a non-occlusive thrombosis of the stent implanted in the right coronary (figures 4a and 4b). Intracoronary ecocardiographic study was performed with IVUS catheter Atlantis SR Pro Boston Scientific, showed an intrastent thrombus (figures 5a and 5b). Likewise, the IVUS confirmed a marked stent underexpansion caused by calcified plaque, as well as areas with obvious stent malapposition (figure 5c). Another bare metal stent Omega Boston Scientific 4 x 24 mm was implanted covering all affected segment, with good angiographic result (figures 6a and 6b). Finally, verification with IVUS of the adequate stent expansion and apposition was carried out. The treatment with clopidogrel was substituted by prasugrel and the patient was discharged 48 hours later, asymptomatic and without in-hospital complications.

Intravascular ultrasound (IVUS) provides detail qualitative and quantitative transmural coronary imaging. The decision to implant a BMS intra MGuard was taken to improve the radial force and to get correct apposition of the previous one. The role of IVUS was fundamental owing to its high quality definition of the intrastent thrombus image and the transcendental identification of the mechanical disorders predisposing to thrombosis. Furthermore, to the best of our knowledge, these are the first intracoronary ultrasound images reported in the literature of the ST of this micronet mesh-covered stent.
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