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Subacute thrombosis of a bioresorbable vascular scaffold implanted for recurrent in-stent restenosis

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An 88-year-old diabetic man was admitted for progressive angina. Four years before, he required a bare metal stent (BMS) implantation in a severely calcified lesion at the ostium of the right coronary artery. Six months later he presented severe focal in-stent restenosis (ISR) which was treated with a new BMS. Urgent coronary angiography showed recurrent ISR **(Figure 1A)**. Optical coherence tomography (OCT) revealed the classic "stent-sandwich" image with two well-expanded stents **(Figure 1B)**. The tissue causing ISR was highly heterogeneous, suggestive of neoatherosclerosis **(Figure 1B)**. After pre-treatment with 600 mg of clopidogrel, aggressive lesion dilation was performed. Then, a bioresorbable vascular scaffold (BVS) (3.5×12 mm) was implanted and post-dilated with a 3.75 mm non-compliant balloon at 26 bar. OCT revealed good results but with some persistent areas of BVS underexpansion **(Figure 1C)**.

Thirty-six hours later, the patient experienced chest pain and the ECG revealed inferior ST-segment elevation. Angiography showed occlusion at the right coronary ostium. OCT disclosed a mixed thrombus obstructing the BVS **(Figure 1D)**. Surprisingly, the BVS minimal lumen area was significantly reduced compared with results immediately after the procedure, demonstrating the occurrence of subacute BVS recoil **(Moving image 1)**. Aggressive multiple balloon dilatations were performed and eventually a satisfactory final result was obtained.

Conflict of interest statement

The authors have no conflicts of interest to declare.

Supplementary data

Moving image 1. BVS subacute thrombosis.

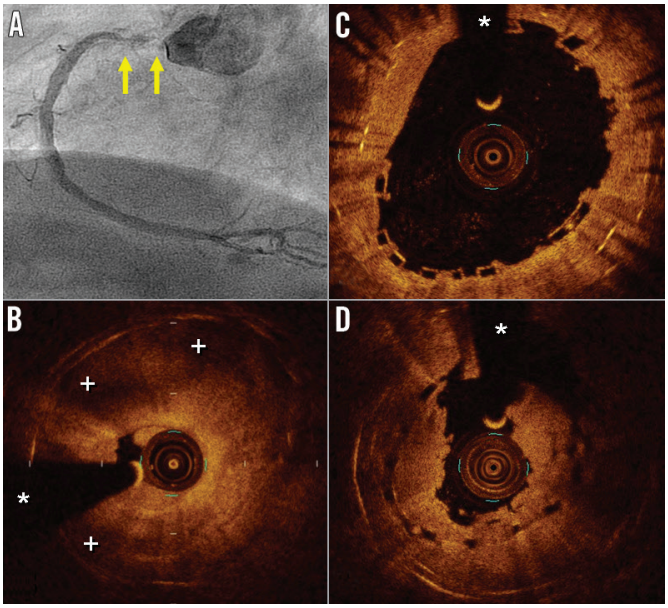

Figure 1. *Angiographic and intravascular findings. A) Angiography showing recurrent severe in-stent restenosis of the proximal right coronary artery (arrows). B) Optical coherence tomography disclosing obstructive neoatherosclerosis with large lipidic areas (+). C) Optical coherence tomography image obtained immediately after BVS post-dilation. The black box appearance of the device is visualised over a double metal stent layer. D) Optical coherence tomography image at the time of BVS thrombosis. The obstructive thrombus is readily recognised but also a clear recoil of the BVS was detected (intra-scaffold minimal area: distal 5.3 mm² [Δ=–1.5 mm²]; proximal 4 mm² [Δ=–1.1 mm²]). (*) denotes wire artefact.*

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