Very late bioresorbable vascular scaffold thrombosis following discontinuation of antiplatelet therapy

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A 39-year-old Kuwaitian man was referred to our catheterization laboratory with an acute anterolateral myocardial infarction. Eighteen months before, he received bioresorbable vascular scaffolds (BVS) in the left anterior descending coronary artery (LAD) and obtuse marginal (OM) branch in Kuwait. After 12 months of treatment with aspirin and clopidogrel, both medications were discontinued as advised by the treating cardiologist. Coronary angiogram demonstrated occlusion of both BVS (Panel A, Supplementary material online, Video S1). After thrombosisuction (Panel B, Supplementary material online, Video S2), optical coherence tomography revealed atherosclerotic plaque, BVS struts, still present 18 months after implantation (Panel D, black arrows, Supplementary material online, Video S4), inhomogeneous endothelialisation of the scaffold struts (yellow arrows) and the classical picture of intraluminal thrombus (white arrows). Three days later—after treatment with aspirin, ticagrelor and tirofiban—a marked reduction of thrombus burden in the BVS was observed (Panel C and E, Supplementary material online, Videos S3 and S5).

Stent thrombosis is a well-known complication after percutaneous coronary intervention with stent placement, leading to myocardial infarction and death. Bioresorbable vascular scaffolds have recently been introduced into the field of interventional cardiology, aiming to reduce very late stent complications. After bioresorption, there would be potentially no triggers for thrombosis, such as uncovered stent struts, with potential reductions in adverse events such as stent thrombosis. Here, we demonstrate that very late stent thrombosis may still occur after BVS implantation, probably due to the presence of uncovered scaffold struts. This suggests the need of lifelong continuation of at least one anti-platelet agent.

Supplementary material is available at European Heart Journal online.