

Vasomotor function and optical coherence tomography follow-up 4 years after Fantom bioresorbable scaffold implantation: A case report

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A 64-year-old hypertensive male patient with type 2 diabetes mellitus and dyslipidemia underwent percutaneous coronary intervention (PCI) of mid left anterior descending artery (LAD) stenosis with implantation of the Fantom bioresorbable vascular scaffold (BRS) 3.0 × 18 mm (Reva Medical, San Diego, CA, USA) due to a chronic coronary symptom. Seven months later he had anterior ST-segment elevation myocardial infarction and was successfully treated with PCI of the left main and proximal LAD with two Xience drug eluting stents 4.0 × 15 mm and 3.0 × 28 mm (Abbott Vascular). Prespecified 48-month follow-up coronary angiography and optical coherence tomography (OCT) showed preserved vessel patency with a 90% absorption of scaffold in the mid LAD without neoatherosclerosis signs and neointimal coverage of metallic stent struts in the proximal LAD. After the first OCT pullback, a bolus

of nitroglycerin was administered intracoronary to assess the vasodilatory response. In the scaffolded region, a 21% increase of the mean lumen area (from 3.69 mm² to 4.40 mm²) was detected. There was no change in lumen areas in the region of the metallic stenting (5.55 mm² and 5.54 mm²) (Fig. 1).

Fantom is a next-generation radiopaque sirolimus-eluting bioresorbable scaffold made from tyrosine-derived polymer with a strut thickness of 125 μm. The restoration of vasomotor function with homogenous neointima in the long-term follow-up is promising for development of a new generation of BRS.

According to available research, the presented case is the first which describes outcomes 4 years after a Fantom BRS implantation. While results are promising, larger studies with long-term follow-up are required to confirm these results.

Conflict of interest: None declared

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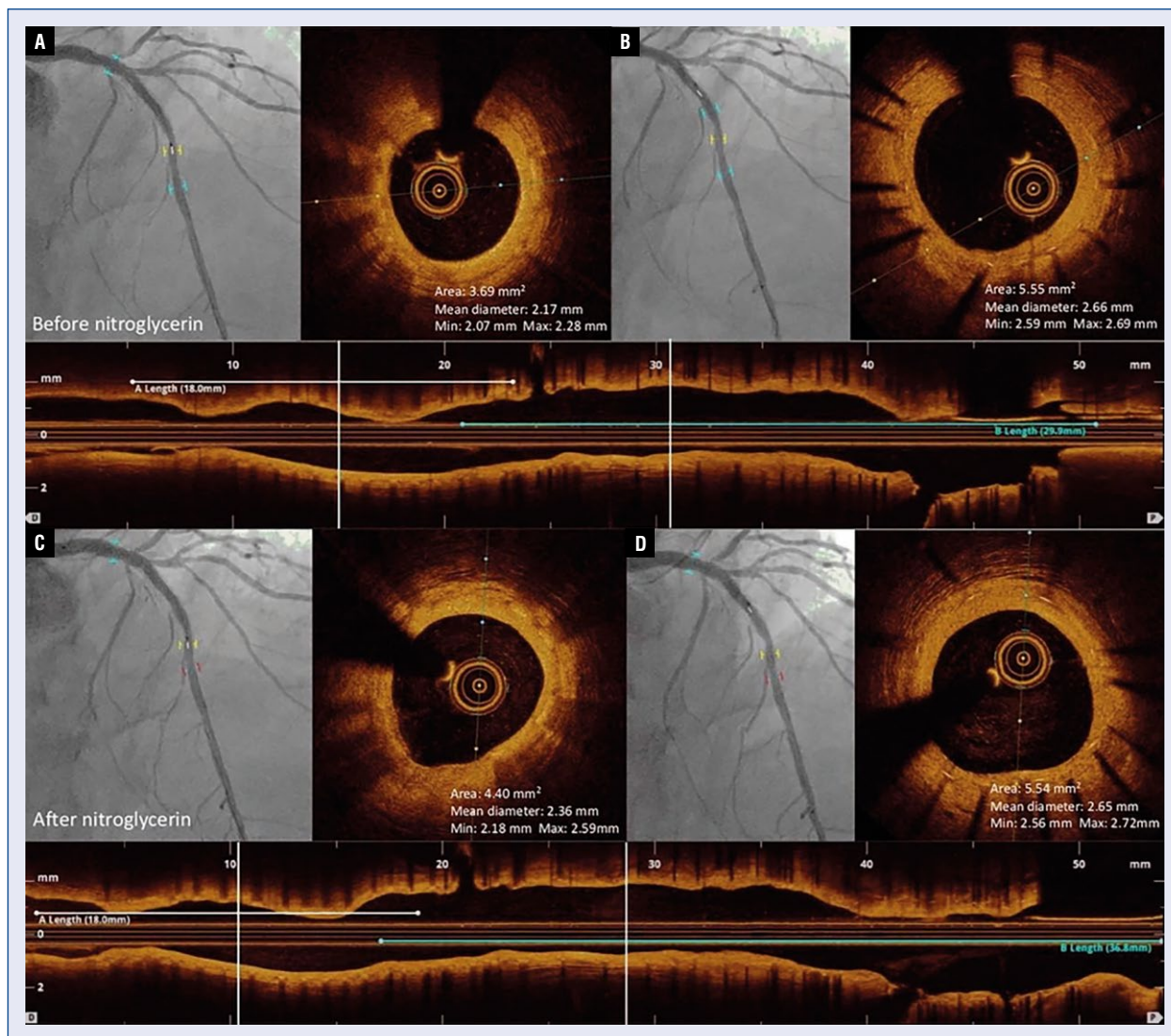


Figure 1. Optical coherence tomography with angiography co-registration 48-month after Fantom bioresorbable scaffold implantation in the mid left anterior descending (A, C) and Xience drug eluting stents in the left main and proximal anterior descending artery (B, D). Measurement before (A, B) and after (C, D) intracoronary nitroglycerin administration. The provided measures are the minimum lumen areas.