

# Chronic total occlusion successfully treated with a bioresorbable everolimus-eluting vascular scaffold

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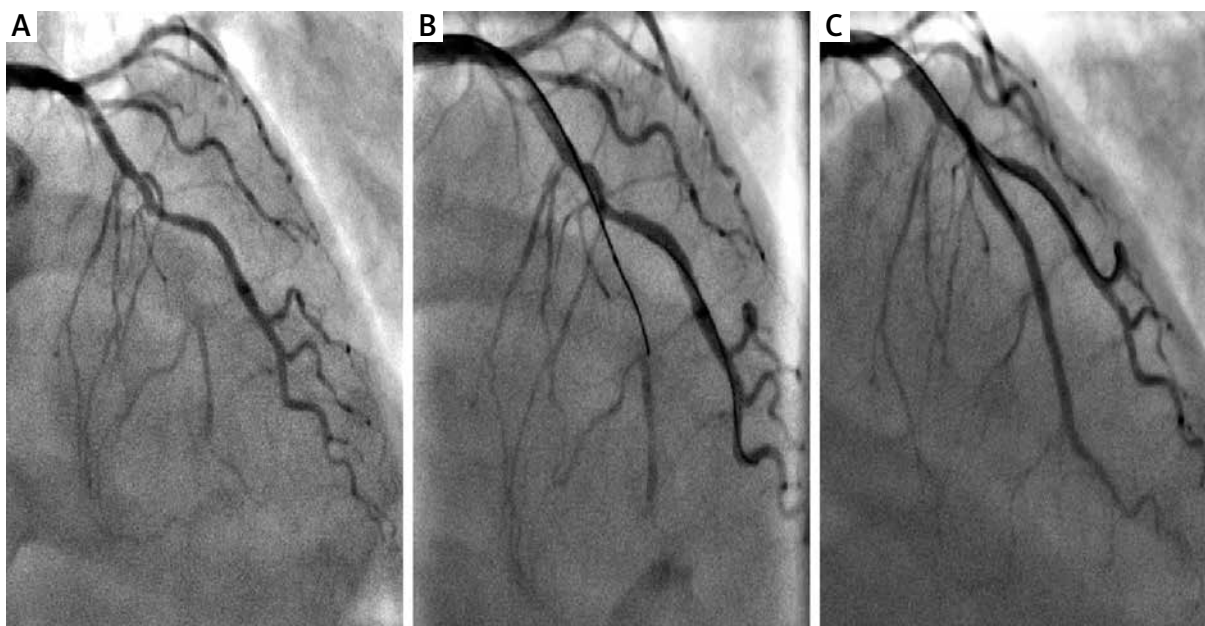
## Abstract

Fully bioresorbable vascular scaffolds (BVS) are a new approach to the percutaneous treatment of coronary artery disease. The BVS have not yet been fully tested in complex lesions, including chronic total occlusion (CTO). We report a CTO case successfully treated with a second-generation bioabsorbable drug-eluting scaffold.

**Key words:** chronic total occlusion, bioresorbable vascular scaffold.

Fully bioresorbable vascular scaffolds (BVS) are a new approach to the percutaneous treatment of coronary artery disease. These scaffolds provide transient vessel

support and drug delivery to the vessel wall without the potential long-term limitations of a traditional metallic drug-eluting stent (DES). The BVS have been shown to res-

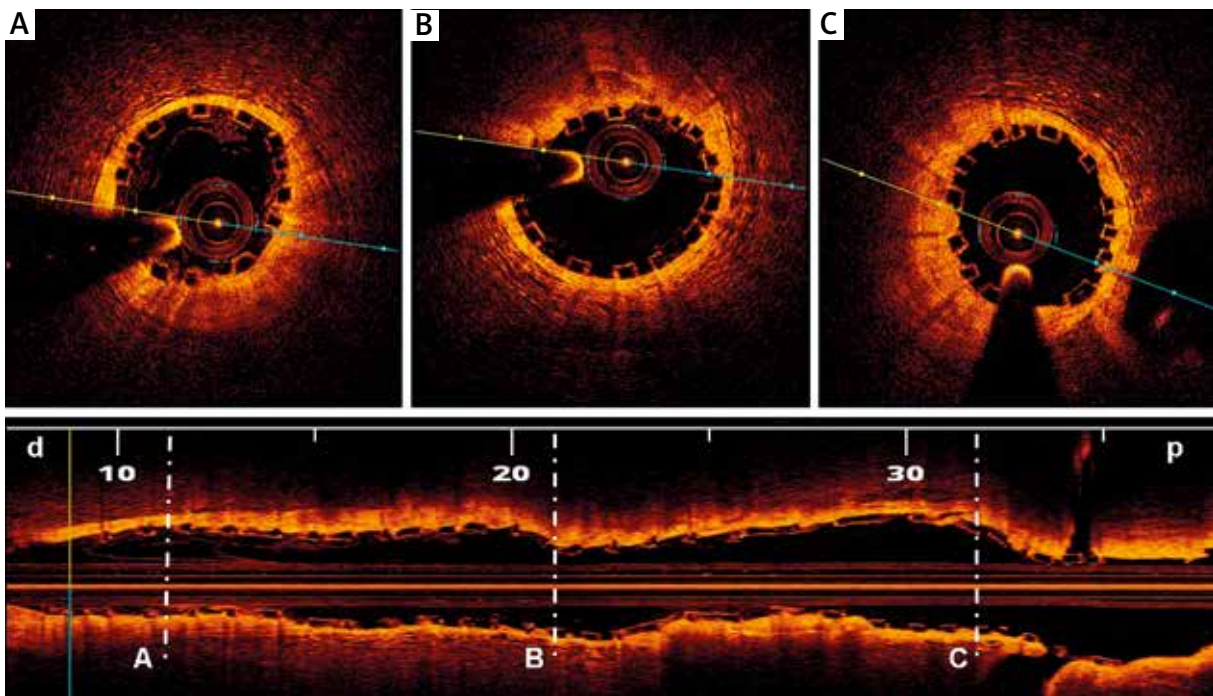


**Figure 1.** Coronary angiography. **A** – Basal coronary angiography revealed total occlusion of the mid-portion of the LAD coronary artery. The distal vessel of this artery was visualized by homocoronary collateral circulation. **B** – Coronary angiography during LAD CTO recanalization by antegrade approach. The lesion was crossed with a Confianza-Pro® 12 (Asahi Intecc) wire advanced through a Finecross® (Terumo) catheter. **C** – Coronary angiography after Absorb BVS® 2.5 mm × 28 mm deployment in the mid-segment of the LAD. Final angiogram showed satisfactory results with TIMI 3 flow

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**Figure 2.** Optical coherence tomography-derived cross-sectional image demonstrated complete stent strut apposition post-intervention. OCT images of the distal (A), middle (B), and proximal (C) segment of the scaffold are shown

*d – distal, p – proximal*

tore vascular function and enable positive vascular remodelling; they also do not preclude coronary artery bypass grafting [1–3]. However, BVS have not yet been fully tested in complex lesions, including chronic total occlusion (CTO).

We report a CTO case successfully treated with a second-generation bioabsorbable drug-eluting scaffold.

A 52-year-old woman with type 1 diabetes was admitted to our centre due to severe chronic stable angina. A myocardial perfusion test revealed significant ischaemia involving the anterior wall. The patient underwent coronary angiography which demonstrated total occlusion of the mid-portion of the left anterior descending (LAD) coronary artery (Figure 1 A). Percutaneous coronary intervention (PCI) was performed using a conventional antegrade approach and an everolimus 2.5 mm × 28 mm BVS 1.1 (Absorb BVS, Abbott Vascular, Santa Clara, CA, USA) was implanted in the LAD (Figure 1 B). The scaffold was post-dilated with a 2.5-mm non-compliant balloon, slowly inflated at 12 ATM.

The final angiogram showed satisfactory results with TIMI 3 flow in the LAD (Figure 1 C). Frequency domain optical coherence tomography (FD-OCT) pullback was performed on the implanted scaffold (C7 System, St Jude Medical, St Paul, USA). Longitudinal view and cross-sections demonstrated good strut apposition and scaffold expansion (Figure 2). At the 6-month follow-up the patient remained asymptomatic.

## References

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