

Bioresorbable Vascular Scaffolds in Anomalous and Tortuous Vessels Treated by Radial Approach

Author(s):

G. Sengottuvelu, MD, DM, FSCAI, FRCP, RavindranRajendran, MD, DM, Department of Cardiology, Apollo Hospital, Chennai, India

Topics:

[Bioabsorbable stents](#)

[Stents](#)

[Transradial](#)

Issue Number:

[Volume 23 - Issue 9 - September 2015](#)

Early and midterm outcomes of bioresorbable vascular scaffolds (BVS) in real-world registry cases have been shown to be comparable to current generation drug-eluting stents (DE



G. Sengottuvelu, MD,
DM, FSCAI, FRCP

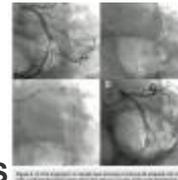
S).¹⁻³ However, the scaffolds' bulky struts, limited size availability, and radiolucent nature have led to avoidance of their use when faced with complex anatomies. We present two cases of such complex anatomies treated using radial access where we have successfully deployed the scaffolds with a good outcome.



Case #1: Anomalous RCA percutaneous intervention with BVS

A 67-year-old non-diabetic male patient presented with crescendo angina for 3 days. His treadmill test for inducible ischemia was positive one month prior. We chose radial access, which

is routine in our practice. Coronary angiogram showed acritical proximal right coronary artery (RCA) lesion arising anomalously from the left sinus near the origin of the left coronary artery (Figure 1A, [Video 1](#)). Through a right radial approach, the anomalous RCA was wired with the tip of a 6 French (Fr) Amplatz Right 1 guiding catheter non-selectively in the left sinus ([Video 2](#)). After pre-dilatation, a 3.5 x 12mm BVS (Absorb, Abbott Vascular) was advanced into the anomalous RCA and deployed across the proximal lesion to achieve a good angiographic result (Figure 1B, [Video 3](#)). It was a short lesion in the proximal segment and was adequately pre-dilated. The Absorb scaffold tracked well into the vessel with buddy wire support, even though the guide was not very supportive.



Case #2: Tortuous LAD percutaneous intervention with BVS

A 60-year-old non-diabetic male patient with a DES in the dominant left circumflex (LCX) placed four years prior presented with non-ST-segment elevation myocardial infarction. His coronary angiogram via a right radial approach showed a patent stent in the LCX and a very tortuous (S-shaped) left anterior descending artery (LAD) with a critical lesion in the mid segment (Figure 2A, [Video 4](#)). After pre-dilation, we planned for an Absorb BVS and placed a buddy wire in the LAD to facilitate tracking of the BVS (Figure 2B, 2C). With the support, the Absorb scaffold tracked well into the tortuous mid LAD. It also had a good conformability within the tortuous segment after deployment and post dilation (Figure 2D, [Videos 5-6](#)).

To our knowledge, this is one of the first reports in the literature of percutaneous coronary intervention (PCI) of a tortuous LAD and anomalous RCA with BVS. Of note, no additional fluoroscopic or procedure time was documented in either case. We believe this to be the result of meticulous procedural planning, the use of appropriate guiding catheters offering good back up, and a buddy wire for tortuous lesions. We perform at least 98% of our cases via a transradial approach. Our procedure times with radial access are the same as with femoral access.

The cases presented herein reinforce that Absorb (a first-generation BVS), though bulky, can be used in real-world situations with complex anatomies through a radial approach using appropriate support devices such as backup guides and buddy wires, and with adequate lesion preparation.

References

1. Gori T, Schulz E, Hink U, Wenzel P, Post F, Jabs A, Münzel T. Early outcome after implantation of Absorb bioresorbable drug-eluting scaffolds in patients with acute coronary syndromes. *EuroIntervention*. 2014 Jan 22; 9(9): 1036-1041.
2. Serruys PW, Chevalier B, Dudek D, Cequier A, Carrié D, Iniguez A, et al. A bioresorbable everolimus-eluting scaffold versus a metallic everolimus-eluting stent for ischaemic heart disease caused by de-novo native coronary artery lesions (ABSORB II): an interim 1-year analysis of clinical and procedural secondary outcomes from a randomised controlled trial. *Lancet*. 2015 Jan 3; 385(9962): 43-54.
3. Puricel S, Arroyo D, Corpataux N, Baeriswyl G, Lehmann S, Kallinikou Z, et al. Comparison of everolimus- and biolimus-eluting coronary stents with everolimus-eluting

bioresorbable vascular scaffolds. *J Am CollCardiol.* 2015 Mar 3; 65(8): 791-801. doi: 10.1016/j.jacc.2014.12.017.