

# Use of Intracoronary Imaging for Optimization of Bioresorbable Vascular Scaffold Implantation and Left Main Disease

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**Key Words:** Bioresorbable vascular scaffold • Intracoronary imaging • Left main disease

Dear Editor:

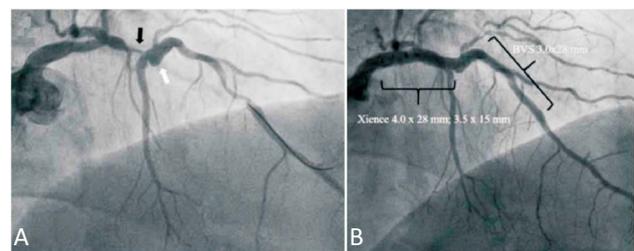
Bioresorbable vascular scaffolds (BVS) implantation in tortuous coronary artery is a substantial challenge and this issue remains inconclusive due to limited supporting data from clinical trials. We have read the clinical research article by Lee et al. with great interest, wherein the authors have described percutaneous coronary intervention for tortuous left anterior descending artery with bioresorbable vascular scaffold via the transradial approach. We agree with the authors about the assistance of Guideliner catheters which provides extreme support for successful achievement and deployment of BVS in tortuous vessel.<sup>1</sup> However, we would like to discuss about the use of intracoronary imaging for optimization of coronary intervention.

According to the consensus document, intravascular ultrasound (IVUS) and optical coherence tomography (OCT) are indicated for optimization and guidance of coronary stent implantation, especially in patients with BVS implantation and left main disease.<sup>2</sup> Intracoronary imaging as compared to angiographic imaging can provide more important information about stent abnormalities involving the vessel wall, such as underexpansion, strut malapposition and stent edge dissection etc.<sup>3,4</sup> These abnormalities are related to target lesion failure and angiography alone is insufficient to detect these

critical issues. In the patient undergoing left main intervention and BVS implantation in tortuous vessel, the authors showed final angiographic result without intracoronary imaging (Figure 1). Absorb BVS may be associated with increased risk of scaffold thrombosis beyond one year after implantation because of the potential mechanism of underexpansion and malapposition.<sup>5</sup> Intracoronary imaging should be considered in patients with left main disease due to particular challenges in procedural complexity and clinical sequela of suboptimal result.<sup>6</sup>

We suggested to perform either IVUS or OCT to confirm the complete expansion of stent without fracture or malapposition after coronary stent implantation. Moreover, post procedural intracoronary imaging can enhance acute procedural result, improve clinical outcomes and reduce mortality from cardiac causes.<sup>7</sup>

In conclusion, application of intracoronary imaging including IVUS or OCT is recommended for optimization of stent implantation and minimization of stent abnormalities. In patients with complex coronary morphology, intracoronary imaging can provide more evidence to



**Figure 1.** Coronary angiography before percutaneous coronary intervention (A). Both of  $3.5 \times 15$  mm and  $4.0 \times 28$  mm everolimus-eluting stents were deployed at distal left main to proximal-left anterior descending artery (LAD). Another one  $3.0 \times 28$  mm BVS was deployed at mid-LAD. Final angiographic result was shown (B).

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support the successful result of coronary intervention.

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Nil.

## DECLARATION OF CONFLICT OF INTEREST

All the authors declare no conflict of interest.

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