A 53-year-old man underwent coronary angiography because of worsening angina, which demonstrated a severe noncalcified lesion in the proximal left anterior descending coronary artery (LAD) (Figure 1A). Following pre-dilation with a 3.0-mm balloon, and showing no evidence of balloon indentation (Figure 1B), intravascular ultrasound (IVUS) revealed hypoechoic plaque with a vessel diameter 3.9 × 4.0 mm at the minimal lumen area (Figure 1C). A 3.5 × 18-mm ABSORB bioresorbable vascular scaffold (BVS) (Abbott Vascular, Santa Clara, California) was subsequently implanted. Despite IVUS showing absence of significant calcification or fibrosis within the plaque, the scaffold balloon
revealed an almost “dog bone sign” even after 1 min of inflation at nominal pressure (Figure 2). IVUS showed underexpansion of the middle segment of the BVS (Figure 3A), therefore, post-dilation with a 3.75-mm noncompliant balloon was subsequently performed without evidence of balloon indentation (presumed balloon diameter: 3.89 mm at 18 atm). Both angiography and IVUS demonstrated an excellent result with an increase in scaffold area at the lesion site from 5.5 to 10.4 mm² (Figure 3B).

There is a consensus that meticulous lesion preparation and post-dilation with an appropriately sized balloon are essential for successful BVS implantation (1-4). Of note, the impact of post-dilation...
has not been well described, and it remains unknown why BVS balloon inflation at nominal pressure recommended by the manufacturer does not suffice to achieve full expansion of the scaffold. This case highlights the importance of post-dilation for optimal BVS implantation even when treating soft lesions. The same does not hold true for conventional metallic stents, where a similar type of lesion could have been treated with direct stenting without post-dilation by some operators. This is likely due to the fact that BVS delivery balloon is more compliant than the Xience Xpedition one (Abbott Vascular), to facilitate deliverability of a scaffold with thicker struts (strut thickness 157 μm with BVS vs. 81 μm with Xience Xpedition).

REPRINT REQUESTS AND CORRESPONDENCE: Dr. Antonio Colombo, EMO-GVM Centro Cuore Columbus, 48 Via M. Buonarroti, 20145 Milan, Italy. E-mail: info@emocolumbus.it.

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KEY WORDS bioresorbable vascular scaffold, intravascular ultrasound, post-dilation