

Late lumen enlargement and plaque regression after drug-coated balloon treatment for an isolated ostial lesion of a diagonal branch

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A 55-year-old man was admitted with worsening effort angina for over 1 week. Hypertension was the only coronary risk factor in this patient, and resting electrocardiography and echocardiography findings, as well as cardiac enzyme levels were normal. Coronary angiography revealed ostial stenosis of the first diagonal branch (90% diameter narrowing) (Fig. 1A, **Suppl. Video 1**). The patient declined complex stent implantation but agreed to receive drug-coated balloon (DCB) treatment. Informed consent was obtained, and the patient underwent careful evaluation.

The ostium of the diagonal branch was dilated several times using a 3.0 × 13 mm scoring balloon at a pressure of 10 atm, followed by placement of a DCB (3.0 × 20 mm), which was inflated to a pressure of 8 atm for 60 s. Final angiography revealed no significant dissection or residual ostial

stenosis of the diagonal branch and the main vessel of the left anterior descending artery (Fig. 1B, **Suppl. Video 1**). Intravascular ultrasound revealed increased luminal area with plaque dissection at the ostium of the diagonal branch (Fig. 1B4, arrow), and the patient's angina was resolved. Nine-month follow-up angiography (Fig. 1C, **Suppl. Video 1**) and intravascular ultrasound findings confirmed excellent results with plaque reduction (Fig. 1C1–C5) and a healed dissected ostial plaque (Fig. 1C4).

Percutaneous coronary intervention for isolated ostial lesions is challenging. It was observed that DCB treatment resulted in a significant reduction in the plaque burden with ostial lumen enlargement without any left anterior descending artery compromise. These findings suggest that DCB treatment may potentially be indicated for ostial lesions, particularly in patients who refuse to undergo stenting.

Conflict of interest: None declared

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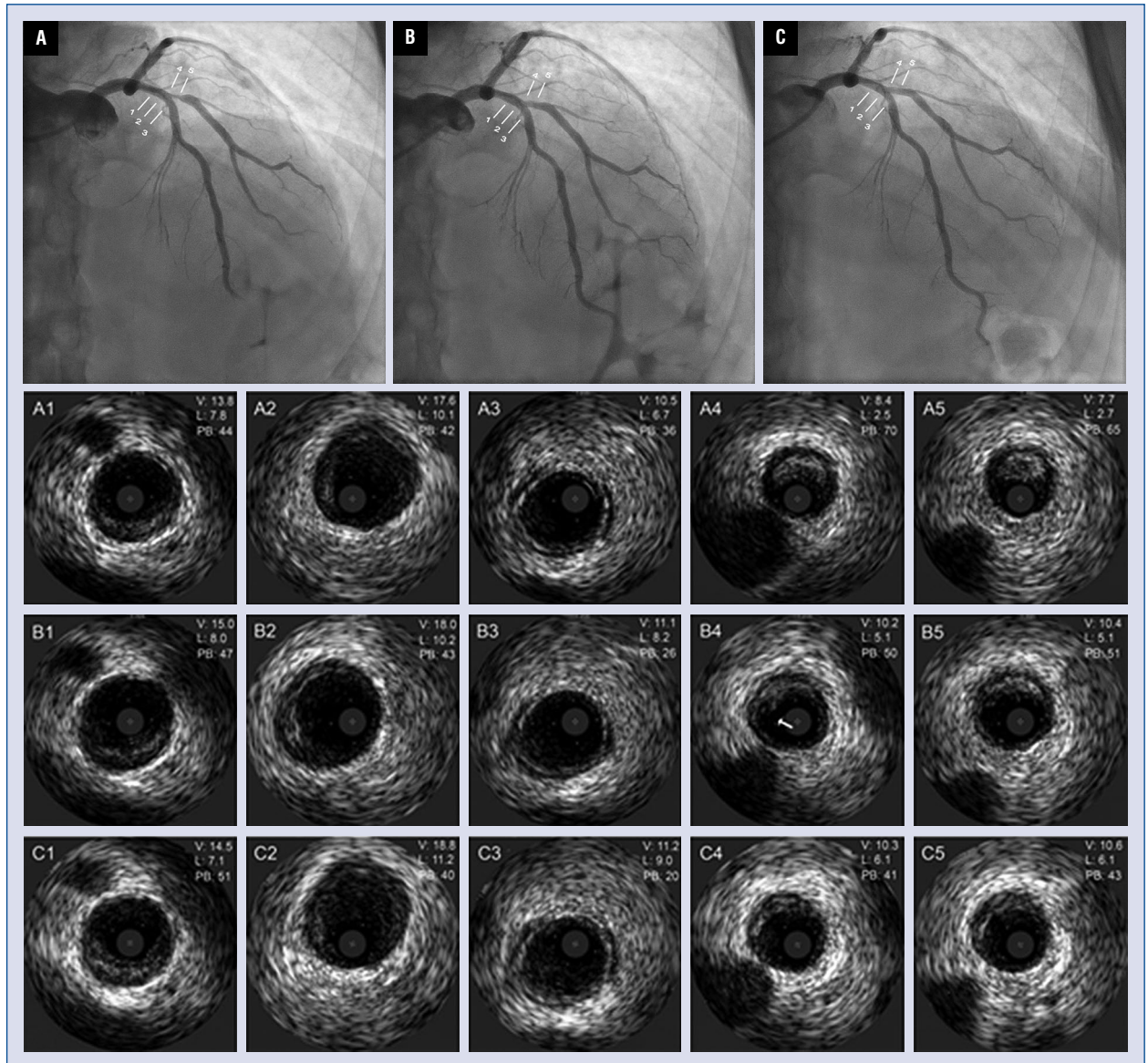


Figure 1. Pre-procedure images (A), post-drug-coated balloon treatment images (B), follow-up angiographic images (C), and those coupled with serial corresponding intravascular ultrasound images. Nine-month follow-up intravascular ultrasound showing significantly increased luminal area with a decreased plaque area at the ostium of the diagonal branch without a significant change in the main vessel of the left anterior descending artery; V — vessel area (mm²); L — lumen area (mm²); PB — plaque burden (%).