

IMAGES IN INTERVENTION

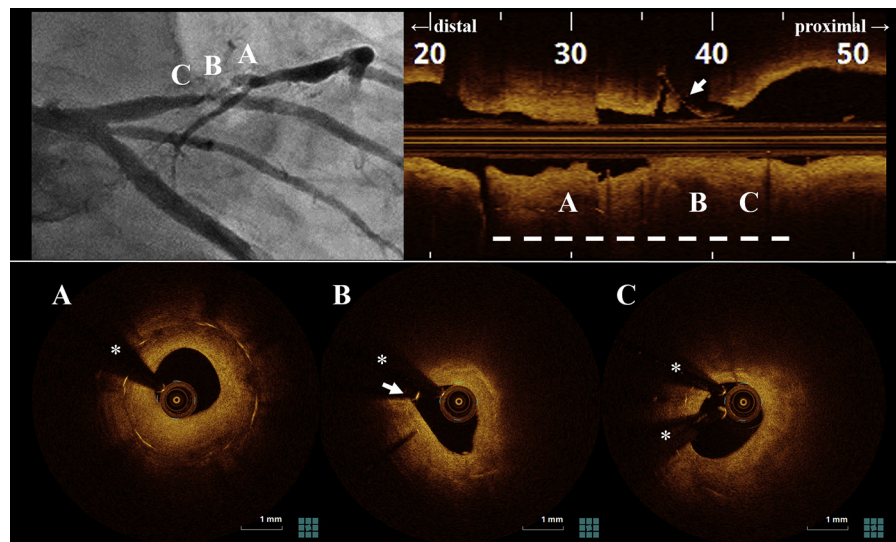
Development of Late Stent Malapposition After Paclitaxel-Coated Balloon Angioplasty for In-Stent Neointimal Hyperplasia



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A 60-year-old man was admitted with new-onset effort angina. Six years previously, he was treated with sirolimus-eluting stent implantation in the left anterior descending artery (LAD). Coronary angiography (CAG) showed late in-stent restenosis (ISR) (Figure 1). Optical coherence tomography (OCT) showed layered neointimal hyperplasia as typical ISR in the distal stent segment (Figure 1A) and a lipid-laden neointima with low backscatter (neointimal hyperplasia) at the proximal stent site

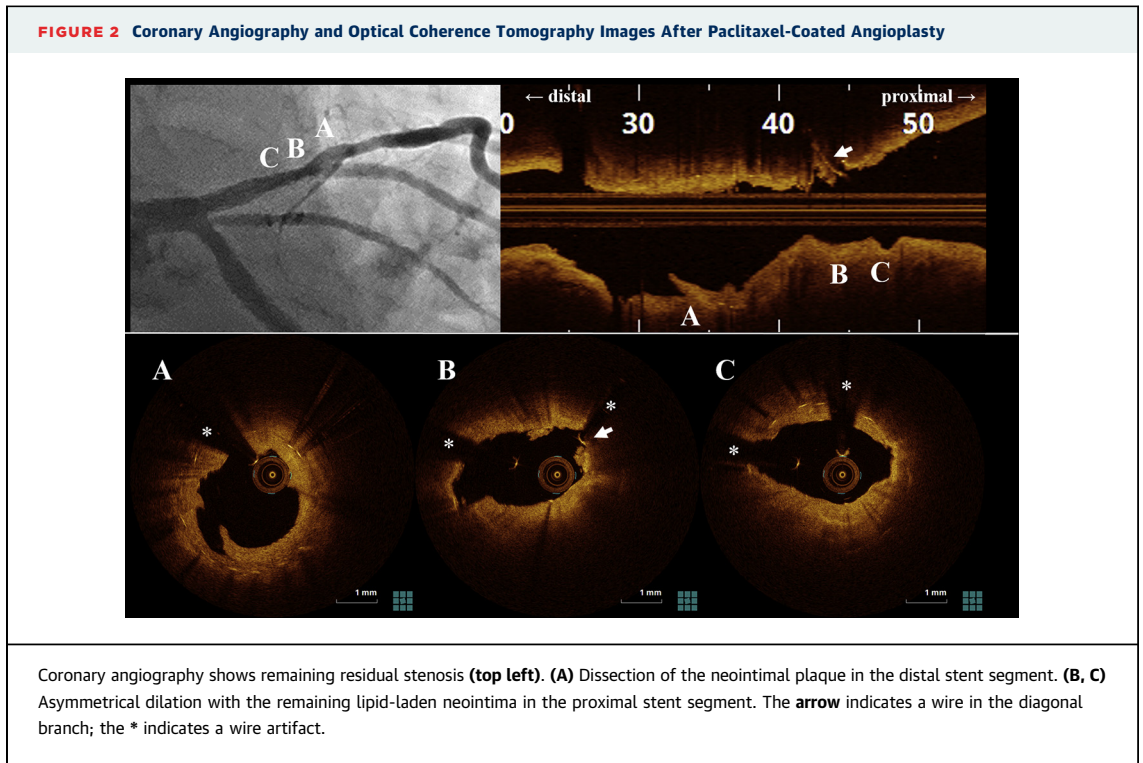
FIGURE 1 Coronary Angiography and Optical Coherence Tomography Images Before Treatment



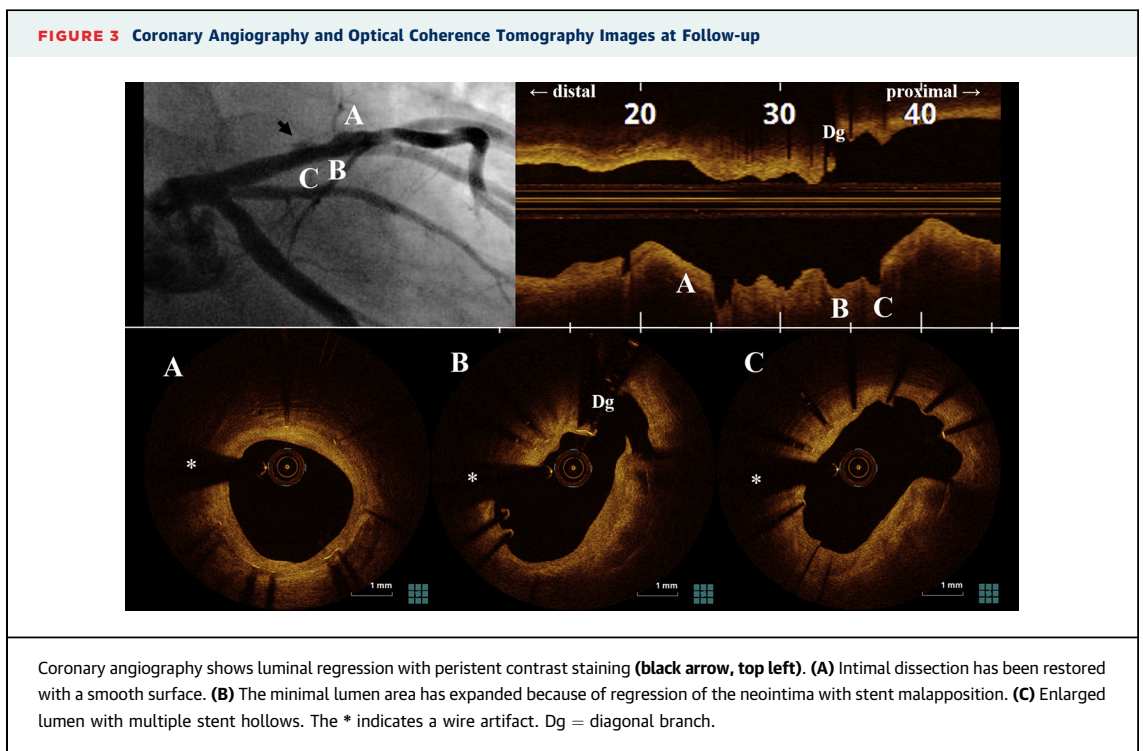
Coronary angiography shows late in-stent restenosis (top left). Optical coherence tomography images are obtained in each A, B and C. (A) In-stent neointima with a layered structure and high backscatter in the distal stent segment. (B, C) A lipid-laden neointima in the proximal stent segment obscures the stent struts. The dashed line in the long-axis view indicates a previously implanted stent segment. The arrow indicates a wire in the diagonal branch; the * indicates a wire artifact.

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(**Figures 1B and 1C**). Coronary revascularization was performed with pre-dilation using a 3.0 × 13-mm scoring balloon with high pressure and then 3.0 × 20-mm paclitaxel-coated balloon (PCB) dilation at 8 atm for 60 s. After the procedure, an OCT image showed sufficient enlargement of the lumen with intimal dissection in the distal part of the stent (**Figure 2A**), but asymmetrical dilation with a



remaining lipid-laden neointima in the proximal part of the stent (Figures 2B and 2C). Final CAG showed acceptable results, but residual stenosis was observed (Figure 2). Eight months later, follow-up CAG revealed regression of the minimal lumen area with persistent contrast staining (Figure 3). OCT findings showed an increased lumen volume with healed dissection in the distal part of the stent (Figure 3A). However, despite regression of the lipid-laden neointima, malapposed stent struts (Figure 3B) and interstrut hollows (Figure 3C) newly developed in the proximal stent segment. The patient has continued to be event free with dual-antiplatelet therapy. PCB angioplasty provides sufficient clinical and angiographic outcomes in patients with sirolimus-eluting stent restenosis (1).

Late-acquired malapposition might develop in cases of in-stent neoatherosclerosis after PCB angioplasty, despite regression of in-stent neointima because paclitaxel has strong lipophilic nature for retention to the vessel wall.

Stent malapposition is a potential complication that should be considered when performing PCB angioplasty for in-stent neoatherosclerosis after stent implantation.

REPRINT REQUESTS AND CORRESPONDENCE:

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