

Coronary Stent Intussusception After Intravascular Ultrasound Catheter Removal

Optical Coherence Tomography Finding

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An 83-year-old man with hypertension and hyperlipidemia presented with angina chest pain. Diagnostic coronary angiography revealed a severe stenosis at the distal segment of the left circumflex artery (Fig. 1). After pre-dilation, a XIENCE V stent (Abbott Vascular, Santa Clara, California) was deployed. Intravascular ultrasound (IVUS) (Revolution, Volcano Corporation, Rancho Cordova, California) examination revealed full circumferential stent expansion without incomplete apposition or edge dissection. After IVUS examination, the IVUS catheter could only be retrieved into the guiding catheter with increased traction. An unexpected incident occurred after IVUS catheter removal. A new haziness appeared at the

middle segment of the left circumflex artery, and the implanted stent was unclear on angiography (Fig. 1).

Stent dislodgement and distortion were suspected. To determine the precise location and configuration of the dislodged stent, we tried an IVUS catheter pass through the haziness in vain. After balloon dilation (1.2 × 6 mm), we could pass an optical coherence tomography (OCT) imaging wire through the haziness. With the continuous-flushing (nonocclusion) method, OCT examination revealed an extremely distorted stent (intussusception) (Fig. 2, Online Videos 1 and 2) and vessel injury at the previously stented segment. At the risk of severe coronary injury (dissection/perforation) to retrieve the stent, we

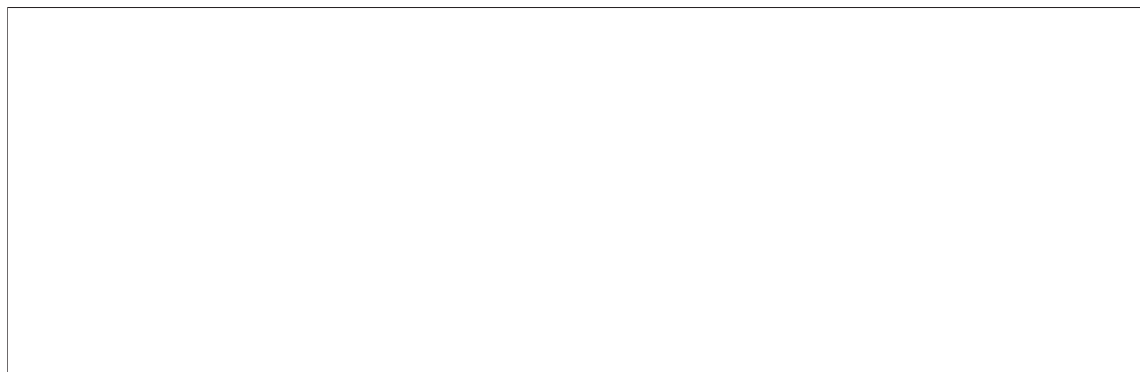
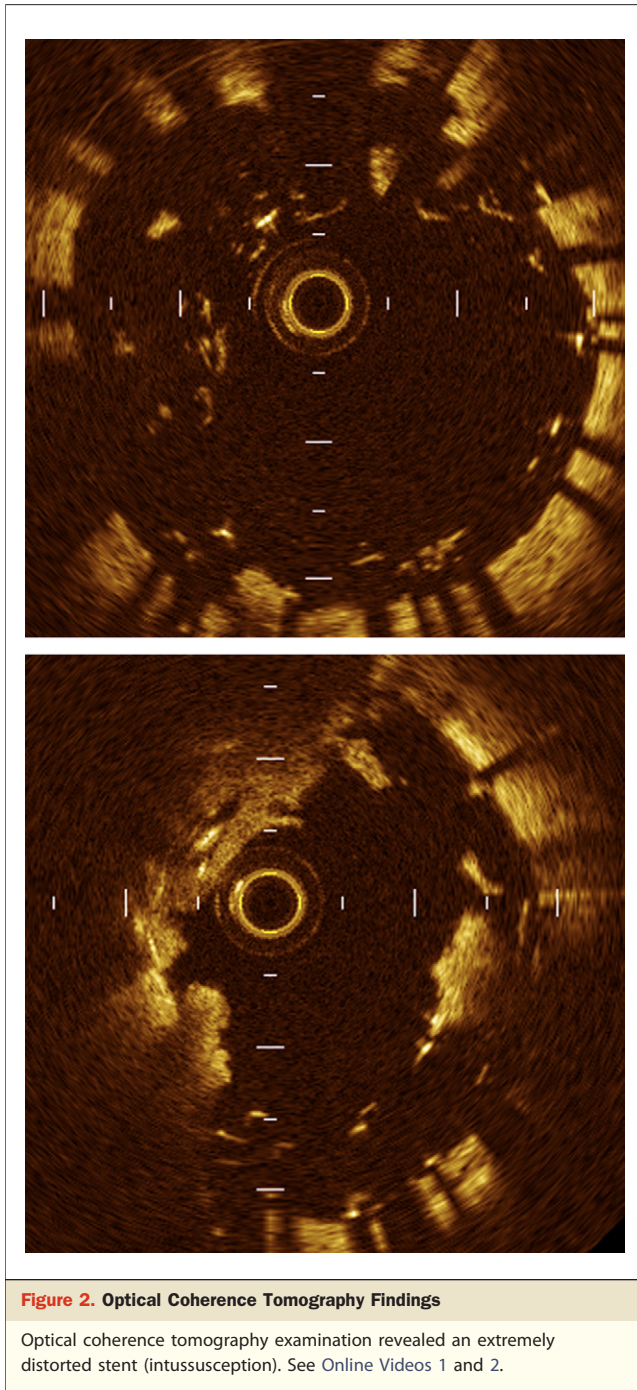


Figure 1. Coronary Angiography Before and After Stent Implantation and After IVUS Examination

(Left) Coronary angiography before stent implantation showed a severe stenosis at the distal segment of the left circumflex artery. **(Middle)** Coronary angiography after stent implantation showed an optimal angiographic result. **(Right)** After intravascular ultrasound (IVUS) examination, a new haziness appeared at the middle segment (**arrow**) of the left circumflex artery.

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decided to crush the stent with a new bare-metal stent, which resulted in an optimal angiographic result.

Previous studies have demonstrated that thinner-struts might reduce restenosis after coronary artery stenting (1). Recent stents often consist of cobalt chromium, due to higher radiopacity and greater strength. Compared with stainless steel stents (stent strut thickness: 130 to 140 μm), the cobalt chromium platform has thinner stent struts (60 to 90 μm) as well as better flexibility and deliverability. However, concern has arisen that the reduced strut thickness might reduce resistance to mechanical force and be susceptible to stent deformity (2–4).

In this difficult case, the use of OCT facilitated improved percutaneous management of a dislodged stent. The patient made a full recovery and was discharged on dual antiplatelet therapy.

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▶ APPENDIX

For accompanying videos, please see the online version of this article.