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Conflict of Interest

The authors have no financial conflicts of
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Longitudinal Stent-Strut Injury at the Distal End of a Newer-generation Drug-eluting Stent

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An 86-year-old man with a recent myocardial infarction underwent coronary angiography, which revealed total occlusion of the left anterior descending coronary artery (LAD) ostium and intermediate stenosis of the proximal left circumflex artery (LCX) (**Figure 1A, Supplementary Figure 1A and 1B**). After stenting with a 3.5×38-mm Resolute Integrity™ (Medtronic, Minneapolis, MN, USA) from the left main (LM) to the LAD, we attempted T-stenting with a 2.75×18-mm Promus Premier™ (Boston Scientific, Natick, MA, USA) in the compromised LCX ostium (**Figure 1B, Supplementary Figure 1C**). Despite repeated

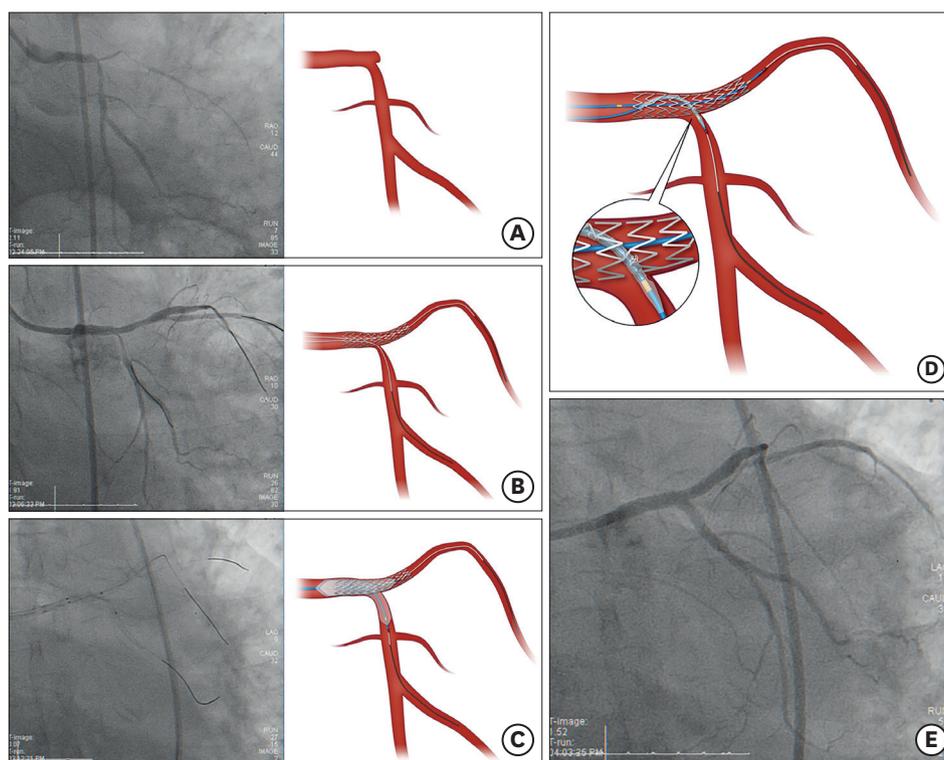


Figure 1. Procedural findings. (A) Pre-PCI CAG. (B) After deployment of a stent into the LAD, the LCX ostium was compromised. (C) A two-step kissing balloon inflation at the left main bifurcation for lesion preparation. (D) Illustration of the stent that could not be inserted into the LCX: the distal tip was stuck at the LCX ostium. (E) Final CAG showing successful PCI results in LAD and LCX. CAG = coronary angiogram, LAD = left anterior descending artery, LCX = left circumflex artery, PCI = percutaneous coronary intervention.

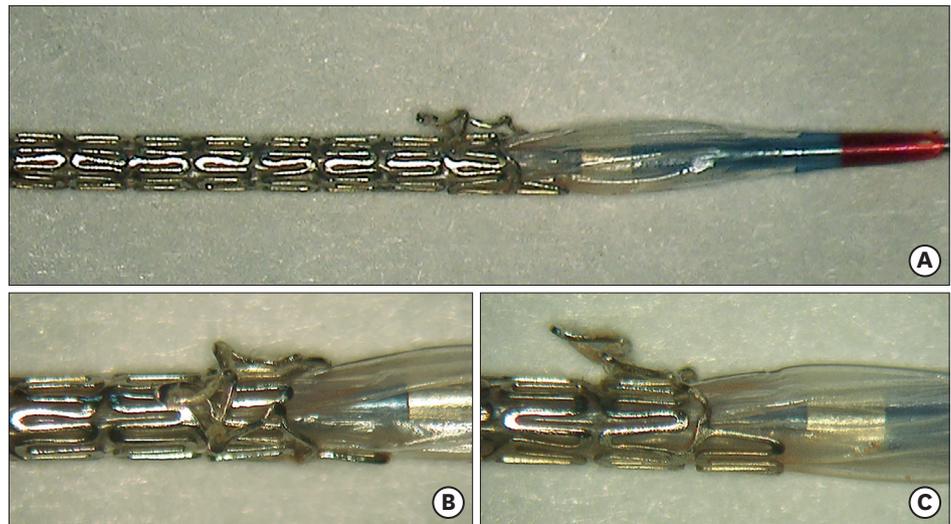


Figure 2. The stent after removal. (A) Stent-strut injury of the distal end of the stent. (B and C), Struts at the distal end of the stent were inversely bent.

predilation and kissing balloon (KB) inflation at the LM bifurcation (**Figure 1C**), the stent failed to cross the LCX ostium and its distal tip became stuck (**Figure 1D**). After removing the whole stent system, prolapse and deformation of the distal struts were noted (**Figure 2**). A 2.5×14-mm Resolute Integrity™ was chosen instead and successfully deployed. The procedure was completed with a final KB at the LM bifurcation (**Figure 1E**). To address increasing concerns regarding longitudinal stent deformation (LSD) with newer-generation drug-eluting stents (DESs), the Promus Premier™ was redesigned to reinforce the axial strength of proximal end, where almost all LSDs occurred in the previous Promus Element™.¹⁻³⁾ However, the distal end of the Promus Premier™ is also vulnerable to longitudinal injury, as highlighted in this case. This is a reminder that caution is needed when using thinner-strut DESs because of their increased vulnerability to different types of deformation or injury due to the current prioritization of stent performance at the expense of strength.⁴⁾⁵⁾ Clinicians need to be aware of the potential for longitudinal injuries not only to the proximal but also to the distal end of stent-struts, particularly in complicated lesions requiring complex procedures.

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SUPPLEMENTARY MATERIAL

Supplementary Figure 1

Angiographic and procedural findings of left circumflex artery (A, B) Pre-PCI CAG. (C) Compromised LCX ostium after deployment of a stent into the LM-LAD.

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