Acute Stent Recoil From Aggressive Post-Dilation of a Second-Generation Drug-Eluting Stent

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A 43-year-old man presented with crescendo angina. Coronary angiography demonstrated ambiguous stenosis of ostial left main stem (LM) (IVUS) post-stenting showed minimum cross-sectional area of 8.5 mm² (Fig. 2B–2). High-pressure (24-atm) post-dilation was performed (Figs. 1A and 1B). After pre-dilation, a 4.0/12 mm Everolimus-eluting stent (Xience Prime, Abbott Vascular, Santa Clara, California) was deployed in the ostium of LM. Intravascular ultrasound with a 4.0/8.0 mm noncompliant balloon to flare the stent struts (Figs. 1C and 1D). An IVUS demonstrated adequate stent expansion in the post-dilated segment. However, the distal segment of stent

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**Figure 2. IVUS at Baseline, Post-Stenting, and Post-Dilation**

IVUS = intravascular ultrasound; LM = left main stem; MSA = minimum stent area; NC = noncompliant.

**Figure 3. IVUS at Baseline, Post-Stenting, and Post-Dilation on Bench Test With MultiLink Stent**

Abbreviations as in Figure 2.
appeared compressed and deformed with minimum cross-sectional area of 7.5 mm² (Fig. 2C-2).

This is the first case to report the occurrence of acute “recoil” phenomenon of a stent probably because of aggressive post-dilation in the proximal segment of the stent. To further evaluate this phenomenon, we performed bench testing on MultiLink stent (Guidant/Advanced Cardiovascular Systems, Santa Clara, California) in a 3.0 mm tube with IVUS assessment. The 3.0 mm MultiLink stent was post-dilated with a 4.0/8.0 mm noncompliant balloon at 24 atm in the proximal segment. The stent exhibited acute recoil phenomenon in the segment distal to post-dilation (Fig. 3). In view of our findings, it reinforces the message that IVUS guidance is extremely vital in LM stenting to achieve optimal results (1).

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