

Ryutaro Waku¹

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A 71-year-old man had undergone PCI for ACS 9 years previously, during which a stent was implanted in the proximal LAD. He subsequently discontinued medical follow-up. In 20XX, he was admitted with ACS. CAG showed severe stenosis of the RCA and an in-stent total occlusion of the ostial LAD. During the acute phase, PCI was performed only for the culprit RCA lesion. Staged PCI for the LAD CTO was subsequently planned.

Because the CTO involved the LAD ostium, the procedural strategy was to puncture the proximal cap immediately adjacent to the carina under IVUS guidance to avoid leaving a partition between the LAD and the high lateral branch (HL). Considering the LAD bifurcation angle, a Conquest Pro 12 with a pronounced second bend was selected, allowing successful puncture of the proximal cap. The guidewire was then stepped down and advanced through the puncture site. Although the entry point was successfully engaged, the steep bifurcation angle caused the guidewire to repeatedly prolapse into the HL, preventing further advancement into the CTO body. Balloon screening of the HL was therefore performed during guidewire manipulation. This effectively prevented prolapse into the HL and enabled successful advancement of the guidewire into the CTO. However, the guidewire subsequently tracked along the edge of the previously implanted stent. As rerouting was considered unlikely to succeed, and balloon screening had also facilitated advancement of the Corsair into the lesion, the microcatheter was exchanged for a SASUKE. A parallel wire technique was then performed, successfully achieving distal true lumen entry and complete revascularization.

The ostial LAD CTO present unique technical challenges. An inappropriate puncture site may leave a partition between the LAD and the LCX or HL, while the bifurcation angle often makes guidewire advancement after proximal cap puncture difficult. In this case, although IVUS guidance enabled optimal puncture adjacent to the carina, the large second bend required for puncture resulted in guidewire prolapse toward the HL. Balloon screening effectively prevented guidewire prolapse, facilitating advancement of both the guidewire and the microcatheter into the CTO and enabling successful completion of the parallel wire technique. This case demonstrates that balloon screening is a useful adjunctive technique for PCI of ostial LAD CTO lesions when guidewire prolapse into a side branch compromises guidewire advancement.