GuideLiner-Facilitated Rotational Atherectomy in Calcified Right Coronary Artery

The “Child” Makes the Difference

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A 77-year-old woman with angina at minimal exertion despite optimal antianginal therapy was referred for percutaneous coronary intervention (PCI) of a tight, heavily calcified stenosis at the midsegment of the right coronary artery (Figure 1A, Online Video 1). PCI had been attempted earlier but was unsuccessful because a 1.25-mm rotablation burr could not cross the stenosis (Figure 1B, Online Video 2).

We used a left femoral access, a long sheath, and an Amplatz Left 1 guide catheter (Boston Scientific, Natick, Massachusetts) to optimize support. However, we were initially unable to cross the stenosis with the rotating 1.25-mm burr. We eventually managed to rotablate the calcified stenosis after we advanced a 6-F GuideLiner (“mother-and-child” technique) (Vascular Solutions Inc., Minneapolis, Minnesota) proximal to the stenosis (Figure 1B, Online Video 3). This maneuver obviously “stiffened” the guide catheter-rotawire-rotablation catheter assembly and enabled the rotating burr to cross the heavily calcified stenosis. The PCI was completed with standard techniques, with excellent results (Figure 1C).

The GuideLiner is a guide catheter extension used for the “mother-and-child” technique, which improves support through deep intubation of the target vessel and thus facilitates delivery of stents in tortuous or calcified vessels (1). The GuideLiner has been previously used to retrieve a trapped rotaburr (2). However, its use to deliver the rotablation burr (3) is off-label and has been reported only once (4). Caution is needed to position the burr distal to the GuideLiner before starting any forward rotation to avoid potential damage and shear of the “child” catheter. It is prudent to avoid large burrs because of the risk of entrapment in the GuideLiner.

The GuideLiner may be a useful adjunct for rotablation when the rotating burr cannot cross a tight, calcified stenosis and more support is needed. Interventional cardiologists must be aware of this potential use of the “mother-and-child” technique.

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