

1162      **Overcoming an uncrossable severely calcified below-the-knee CTO using needle-based modification and retrograde balloon crossing**

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A 56-year-old man with diabetes mellitus receiving maintenance hemodialysis was referred to our hospital for chronic limb-threatening ischemia with gangrenous ulcers of the right second and fifth toes. His ankle-brachial index was 0.73, and imaging revealed severely calcified below-the-knee occlusions. After consultation with vascular surgeons, endovascular revascularization was performed. Angiography demonstrated severely calcified occlusions of the anterior tibial artery (ATA) and posterior tibial artery (PTA). An antegrade guidewire successfully crossed the ATA lesion; however, a microcatheter, a small-diameter balloon, and a Wingman catheter failed to cross. Therefore, a needle rendezvous technique using a 20G needle was performed at the distal ATA, achieving guidewire externalization. Despite guidewire externalization, antegrade device crossing remained unsuccessful. Subsequently, calcific plaque modification using the Inner PIERCE technique with a 20G needle was performed via the retrograde approach; however, antegrade device passage was still not achieved. Finally, a 1.5-mm balloon successfully crossed the lesion retrogradely. After retrograde balloon dilation, a 2.0-mm balloon crossed the lesion antegradely, resulting in adequate lesion expansion and restoration of satisfactory blood flow. This case suggests that needle-based calcific plaque modification is effective for severely calcified below-the-knee lesions and that direct retrograde balloon crossing is a useful bailout technique when antegrade device crossing is unsuccessful.