High-Resolution Angioscopy After Subintimal vs. After Intraluminal Angioplasty for Femoropopliteal Chronic Total Occlusion

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In patients with femoropopliteal chronic total occlusion (FP-CTO), intraluminal angioplasty (IA) is often substituted for by subintimal angioplasty (SA). The reason for these angioplasties demonstrating the same clinical results, however, is unclear.

Here, we report the differences in the 2 procedures using high-resolution angioscopy with a 9,000-pixel imaging sensor. Figure shows intravascular ultrasound (IVUS) and high-resolution angioscopy of SA (Figure A,B) and IA (Figure C,D) for FP-CTO. A high-resolution angioscopy movie showing pull-back from the distal FP-CTO after SA is given in Supplementary Movie 1, and that after IA is given in Supplementary Movie 2.

We found that there were markedly fewer thrombi and dissections in vessels undergoing SA than in vessels undergoing IA. Less vessel damage caused by SA might contribute to the suppression of excessive healing processes after the intervention. Further angioscopy studies are required to corroborate these findings.

Disclosures
The authors declare no conflicts of interest.

Reference

Supplementary Files
Supplementary Movie 1. Review of the distal femoropopliteal chronic total occlusion after subintimal angioplasty.
Supplementary Movie 2. Review of the distal femoropopliteal chronic total occlusion after intraluminal angioplasty.
Please find supplementary file(s): http://dx.doi.org/10.1253/circrep.CR-18-0026

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Figure. (A, C) Intravascular ultrasound (IVUS) and (B, D) high-resolution angioscopy after (A, B) subintimal angioplasty (SA) and (C, D) intraluminal angioplasty (IA) for femoropopliteal chronic total occlusion. (A) The IVUS catheter is in the subintimal space. (B) The subintimal lumen appears oval, without the thrombi and severe dissections seen on IA. (C) The IVUS catheter in the vessel lumen. (D) Massive thrombi and severe dissections in the vessel after IA.