Distribution of Paclitaxel Particles After Drug-Coated Balloon Treatment

— Comparison Between Intravascular Ultrasound Images and Electronic High-Resolution Angioscopy —

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Figure. (A,B) Angiographic images after predilatation with a balloon (A) and drug-coated balloon (DCB) deployment (B). (C,D) Angioscopic images after predilatation with a balloon (C) and drug-coated balloon (DCB) deployment (D). Paclitaxel particles were adhered to the vascular wall. (E,F) Intravascular ultrasound images after predilatation (E), showing dissection (arrows), and after DCB deployment (F), showing a hyperechoic dotted line along the lumen surface (arrowheads).

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We observed the distribution of paclitaxel particles on the vascular wall after treatment with a drug-coated balloon (DCB; IN.PACT™ Admiral™ DCB; Medtronic) using an electronic high-resolution angioscope (Zemporshe®; OVALIS, Osaka, Japan) and intravascular ultrasound (IVUS; Opticross HD; Boston Scientific).

A 78-year-old woman underwent endovascular treatment for chronic total occlusion of the right mid-superficial femoral artery (SFA). Zemporshe® angioscopy and IVUS were performed at the time of predilatation with a balloon (5mm×60mm) and DCB (6mm×80mm) deployment at 8 atm for 300 s. Compared with both IVUS images (**Figure**), a hyperechoic dotted line appeared along the lumen surface after DCB deployment. Matching this to the angioscopic image for this patient, the dotted line is expected to correspond to paclitaxel particles. The IVUS images detected paclitaxel particles in the form of a homogeneous and circumferential line. IVUS should be useful in evaluating drug distribution.

The distribution of paclitaxel particles after DCB treatment has been reported previously using angioscopic images.^{1,2} However, to the best of our knowledge, the present study is the first to report that IVUS images can be used to show paclitaxel particles.

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None.

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