A 76-year-old woman presented with life-limiting claudication in the left leg. Ankle brachial index (ABI) was 1.07/0.63 (right/left). Duplex ultrasound showed a decreased flow pattern of the left popliteal artery with normal flow pattern in the common femoral artery (CFA), and stenosis or occlusion of the left superficial femoral artery (SFA) was strongly suspected.

Angiography 1 month later showed severe stenosis in the left superficial femoral artery. Arterial repair after Zilver PTX implantation in the SFA, however, remains uncharacterized.

Polymer-free, paclitaxel-coated nitinol drug-eluting stent (Zilver PTX; Cook Medical, Bloomington, IN, USA) is now available for the treatment of peripheral artery disease in the superficial femoral artery (SFA), and durable clinical outcomes compared to the bare-metal stent counterpart have been reported.1-4 Arterial repair after Zilver PTX implantation in the SFA, however, remains uncharacterized.

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Angiography 1 month later showed severe stenosis in the left SFA.
left SFA (Figure 1A), which was treated with endovascular therapy (EVT) after 2 weeks of dual anti-platelet therapy (DAPT) with aspirin 100mg/day and clopidogrel 75mg/day. Through a contralateral approach from the right CFA with a 6-Fr guiding sheath (ANSEL; Cook Medical) and following 5,000U of intra-arterial unfractionated heparin, the severe stenosis in the left SFA was crossed with a 0.014-in guidewire (Aguru Support; Boston Scientific, Natick, MA, USA). Vessel diameter was assessed on intravascular ultrasound (IVUS; Atlantic Pro SR2; Boston Scientific) and a Zilver PTX (7.0-mm diameter x 60 mm long) was then implanted followed by additional angioplasty (SHIDEN, 6.0-mm diameter x 40 mm long; Kaneka, Osaka, Japan). Final angiogram showed good vessel patency (Figure 1B) with sufficient stent area as determined on IVUS. No perioperative complications occurred, and the patient was discharged 2 days after the procedure; she was completely free from quality-of-life-impairing claudication, and ABI of the left leg improved from 0.63 to 0.99.

Follow-up angiography at 2 months after EVT indicated persistent patency of Zilver PTX (Figure 2A). Angioscopy (Vecmova NEO; FiberTech, Tokyo, Japan) showed fully visible struts with red thrombus adhesion and yellow plaque underneath the stent in some areas (Figures 2B,D), and complete neointimal coverage without thrombus in other areas (Figure 2C). The wall color at the distal reference of the stented site was slightly yellow. Dotted red line, site of paclitaxel-coated nitinol drug-eluting stent implantation; GW, guidewire.

**Figure 2.** Angiography and angioscopy of intra-stent surfaces 2 months after paclitaxel-coated nitinol drug-eluting stent implantation. (A) Follow-up angiography 2 months after endovascular therapy showing a patent paclitaxel-coated nitinol drug-eluting stent. (B–E) Angioscopy showing (B,D) fully visible struts with red thrombus adhesion and yellow plaque underneath the stent in some areas, and (C) complete neointimal coverage without thrombus in other areas. (E) The wall color at the distal reference of the stented site was slightly yellow. Dotted red line, site of paclitaxel-coated nitinol drug-eluting stent implantation; GW, guidewire.
Widely uncovered struts were observed 2 months after Zilver PTX implantation in the SFA. A ratio of uncovered struts to total stent struts per section of >30% is a risk factor for stent thrombosis. The recommended duration of DAPT is 2 months because the paclitaxel elutes for 56 days. Although it remains unclear whether the present angioscopic finding is clinically relevant or not, the thrombogenicity observed might suggest the need for continuation of DAPT beyond 2 months after Zilver PTX implantation in the SFA.

We were able to perform angioscopic evaluation of an SFA treated with Zilver PTX 2 months after stent implantation. Widely visible struts without neointima and with red thrombus were observed, suggestive of thrombogenicity 2 months after Zilver PTX implantation.

References


