



Successful bailout of stent graft stuck in stent occlusion lesion

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VIABAHN[®] (VIABAHN[®], W. L. Gore, Flagstaff, AZ, USA) is a safe and effective stent graft for the treatment of peripheral artery disease, especially for very long occlusions and thrombotic lesions [1, 2]. VIABAHN[®] has an unfolding stored thread delivery system, which carries a risk of imperfections that can catch on a lesion or other structures. Cases of devices becoming stuck before deployment are considered serious events that may need surgical repair.

A 69-year-old man with a 7-year history of hemodialysis for diabetic nephropathy received coronary artery bypass surgery 3 years prior. He first presented at our hospital 2 years ago complaining of right ischemic foot ulceration and right SFA occlusion. We implanted VIABAHN[®]. One year later, he returned with right SFA re-occlusion. We implanted a bare-metal nitinol stent (INNOVA[®] 7.0 mm × 100 mm, Boston Scientific, MA, USA) in the re-occluded VIABAHN[®] site. Nine months later, he exhibited yet another right foot ulcer.

Pre-procedural angiography showed re-occlusion in the right SFA from the ostium to the popliteal artery (Fig. 1a) and a stent fracture site (Fig. 1b) in spite of continued dual antiplatelet therapy (aspirin 100 mg and clopidogrel 75 mg). His ankle–brachial index was 0.57.

We employed a crossover approach from the left common femoral artery with a 6 Fr Destination[®] (TERUMO Co., Tokyo, Japan). Next, we attempted wiring with a Prominent[®] microcatheter (TOKAI Medical Products, Aichi, Japan) and Halberd[®] (ASAHI INTECC CO LTD, Aichi, Japan), with aspiration and distal protection using TOMETAKUN[®] (ZEON MEDICAL INC, Tokyo, Japan). Intravascular ultrasound (IVUS; Eagle Eye[®], Volcano Philips, CA, USA) showed a partial stent fracture (Fig. 1c).

Repeated balloon angioplasty with a 4.0 mm SABER[®] (Cordis, Cardinal Health, OH, USA) and aspiration was not effective. We next tried to insert VIABAHN[®] into the stent. We felt strong resistance during stent placement as the VIABAHN[®] became stuck at the stent fracture site (Fig. 1d), possibly due to deployment line interference. Antegrade wiring from the brachial artery with a 6 Fr system could not pass the stuck site. Next, we attempted a retrograde approach with a 4 Fr sheath in the popliteal artery. Although neither a Jupiter[®] 60 DP (Boston Scientific, MA, USA) nor a 0.035 Radifocus[®] (TERUMO Co., Tokyo, Japan) could be passed, we were able to penetrate a new VIABAHN[®] with a Radifocus[®] wire tail from distal to proximal (Fig. 1e). We changed to a Vassallo[®] (Cordis, Cardinal Health, OH, USA) with NAVICROSS[®] (TERUMO Co., Tokyo, Japan) and subsequently performed balloon dilatation with a 4 mm × 20 mm Coyote[®] (Boston Scientific, MA, USA) for the previous fracture stent and stuck point with a newly deployed VIABAHN[®] (Fig. 1f). IVUS showed that the wire had penetrated the stent graft. After balloon dilatation with a 5.0 mm × 40 mm SABER[®] (Cordis, Cardinal Health, OH, USA), the resistance disappeared and we could implant the VIABAHN[®] into the previous stent. We completed full coverage of the re-occlusion site and post-ballooning (Fig. 1g).

The retrograde tail of 0.035 wire penetration and balloon dilation are viable options for bailout of VIABAHN[®] stuck.

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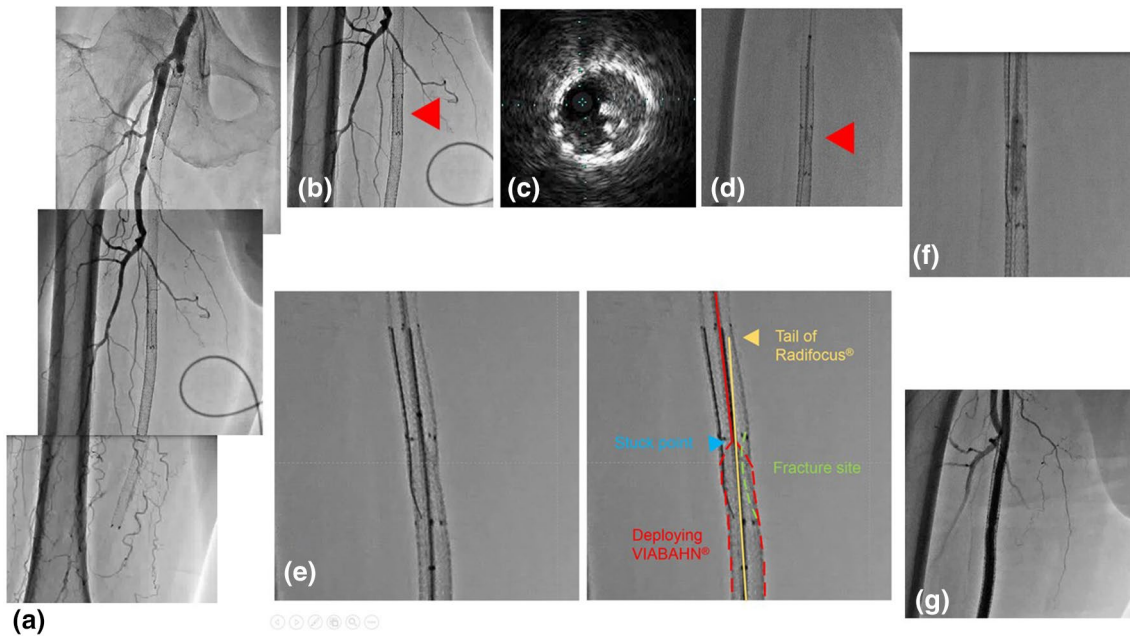


Fig. 1 **a** Pre-procedure angiography: re-occlusion from ostium to distal SFA. **b** Stent fracture site (bare metal nitinol stent in VIABAHN® 9 months prior). **c** IVUS findings: stent fracture site. **d** VIABAHN®

stuck in stent fracture site. **e** Penetration of stent graft with tail of Radifocus® from retrograde. **f** Ballooning of stuck site. **g** Final angiography

Compliance with ethical standards

Conflict of interest All authors have no competing interests.

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