Cardiovascular Intervention and Therapeutics (2019) 34:76–77
https://doi.org/10.1007/s12928-018-0514-0

IMAGES IN CARDIOVASCULAR INTERVENTION

Easily size-adjustable homemade snare effective for bailout of kinked guiding catheter

Daisuke Miyawaki[1] · Tetsuya Nomura[1] · Hiroshi Kubota[1] · Masakazu Kikai[1] · Natsuya Keira[1] · Tetsuya Tatsumi[1]

Received: 6 January 2018 / Accepted: 20 February 2018 / Published online: 23 February 2018

We performed percutaneous coronary intervention (PCI) for in-stent restenosis in the right coronary artery (RCA) of an 82-year-old man who had been on hemodialysis for chronic renal failure. We used a 6Fr standard sheath with 10-cm length via the right femoral artery, and attempted to insert a 6Fr JR4 guiding catheter in the orifice of the RCA. However, the torque response to clockwisely rotating the guiding catheter could not be effectively transmitted due to high-level resistance from the tortuous iliac artery. After several attempts to insert the guiding catheter, marked kinking of the guiding catheter in the iliac artery occurred (Fig. 1a, b). We first tried to insert a 0.035-in. guidewire in the kinked guiding catheter, but we could not advance it beyond the kinked portion due to the collapse of the catheter's lumen. We attempted to remove the kinking by counter-clockwisely rotating the guiding catheter. However, this failed because both the distal and proximal bodies of the kinked guiding catheter had simultaneously rotated. To resolve the situation, fixing the distal body of the kinked guiding catheter was essential. Because the tip of the kinked guiding catheter was in the ascending aorta, the loop of the commercially available snare was too small to efficiently catch the catheter tip in such a large space. Therefore, we prepared a homemade snare that consisted of a 6Fr MP guiding catheter, a 0.014-in. conventional coronary guidewire, and a semi-compliant monorail-type balloon catheter with a 2.5-mm diameter (Fig. 1c). Using this snare system via the left brachial artery, we could easily catch the kinked guiding catheter (Fig. 1d) and fix it at the top of the aortic arch (Fig. 1e). Then, we could remove the kinking by counter-clockwisely rotating the proximal body of the kinked guiding catheter (Fig. 1f), and safely retrieve it inside the sheath via the right femoral artery. After that, we exchanged the standard sheath to a long type sheath with 25-cm length and successfully performed PCI.

The concept of this snare system was initially reported in 2015 [1]. However, there is no report of this system being used for a bailout procedure. Snares are useful in various situations, especially when retrieving a foreign body in a vessel. When used in a larger space, the snare loop should be flexibly adjustable. Although the loop of commercially available snares has limited size adjustability, this homemade snare can be easily adjusted without any size limitations.

✉ Tetsuya Nomura
t2ya821@yahoo.co.jp

[1] Department of Cardiovascular Medicine, Kyoto Chubu Medical Center, 25 Yagi-Ueno, Yagi-cho, Nantan, Kyoto 629-0197, Japan

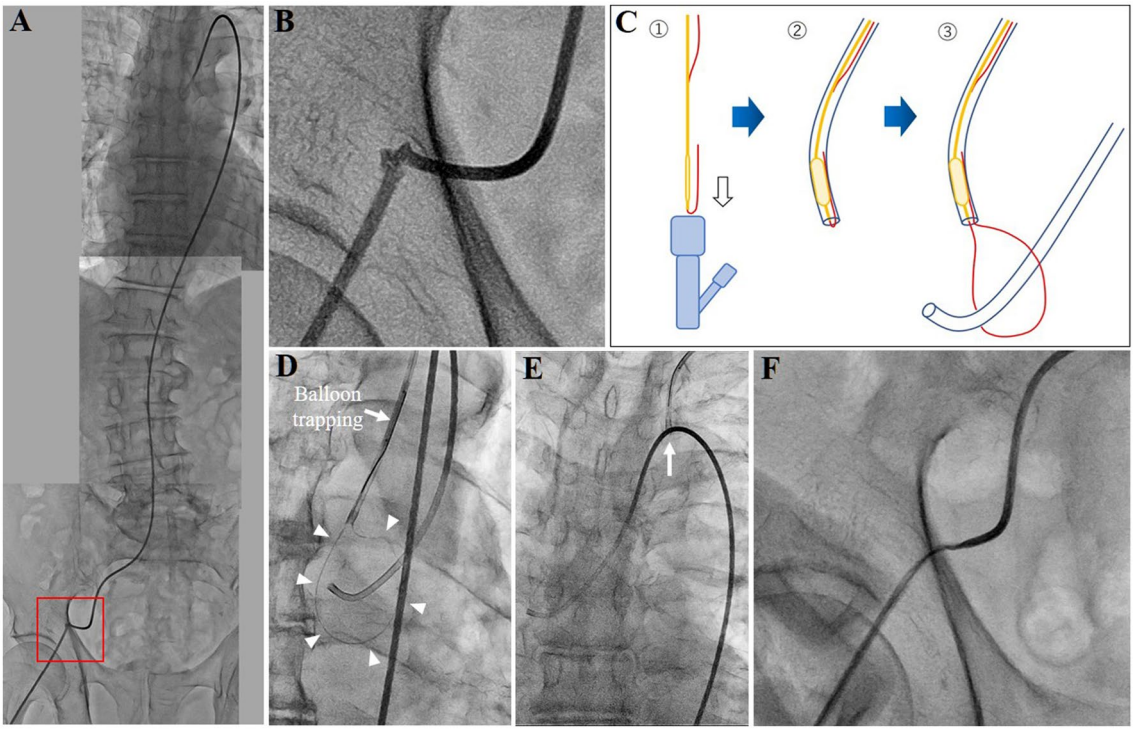

Fig. 1 **a** Marked kinking of the guiding catheter in the right iliac artery. **b** A magnified image of the kinked portion. **c** Schema of the procedure. ① Folded guidewire mounted by a monorail-type balloon catheter being inserted through a Y-connector. ② Trapping the tip of the folded guidewire by balloon inflation. ③ Pushing forward the guidewire, making a size-adjustable snare loop. **d** The large snare loop (arrowheads) can easily catch the guiding catheter even in the ascending aorta. **e** The distal body of the kinked guiding catheter is fixed by the snare (arrow). **f** Kinking of the guiding catheter is effectively removed

Compliance with ethical standards

Conflict of interest The authors declare no conflicts of interest.

Informed consent Written informed consent was obtained from the patient for publication of this image article.

Reference

1. Yokoi K, Sumitsuji S, Kaneda H, Siegrist PT, Okayama K, Ide S, et al. A novel homemade snare, safe, economical and size-adjustable. EuroIntervention. 2015;10:1307–10.