Successful transcollateral approach for chronic total occlusion of the superficial femoral artery using a side-hole sheath

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Disclosure

Speaker name: Kenta Onodera

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)
- ✔ I do not have any potential conflict of interest
Case

- A 63-year-old man with a history of diabetes mellitus and dyslipidemia presented to our hospital with claudication.
- Magnetic resonance imaging previously performed at another hospital revealed severe stenosis of his bilateral external iliac arteries (EIAs) and chronic total occlusion (CTO) of his bilateral superficial femoral arteries (SFAs).
- Ankle brachial index measured 0.52 and 0.53 at rest on the right and left side, respectively.
- He successfully underwent endovascular treatment (EVT) of both EIAs and the right SFA, and then was readmitted to our hospital for EVT of the left SFA.
**Approach**: Ipsilateral antegrade approach

**Sheath**: Side-hole sheath

**Guidewire crossing**: Antegrade approach through the side hole

- Transcollateral approach

- Distal femoral puncture (Omote-pun)

**Image guidance**: Transvenous intravascular ultrasound (IVUS)
Side-hole sheath (RIKISHI H$_3$K$_2$)

- Stainless steel pipe
- 2.0 mm × 10 mm diameter side hole
- Tapered tip with a 0.037-inch guidewire lumen
- Skin fixing sleeve
- Detachable Y-connector

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Conventional ipsilateral antegrade approach

SFA CTO

DFA

CFA
Conventional ipsilateral antegrade approach
Conventional ipsilateral antegrade approach

SFA CTO
DFA
CFA

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Conventional ipsilateral antegrade approach

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DFA

CFA
Conventional ipsilateral antegrade approach

SFA CTO

CFA

DFA
Side-hole sheath (RIKISHI H$_3$K$_2$)

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Support catheter: Rubicon 0.018
Guidewire: Chevalier 14 Tapered 30 g

Bifurcation of SFA and DFA
**Approach:** Ipsilateral antegrade approach

**Sheath:** Side-hole sheath

**Guidewire crossing:**
- Antegrade approach through the side hole
- Transcollateral approach
- Distal femoral puncture (Omote-pun)

**Image guidance:** Transvenous IVUS
Transcollateral approach by using a side-hole sheath
Transcollateral approach
Support catheter: Prominent standard
Guidewire: Cruise 0.014 inch 300 cm
Transcollateral approach
Support catheter: Prominent standard
Guidewire: Cruise 0.014 inch 300 cm
Transcollateral approach
Support catheter: Prominent standard
Guidewire: Halberd 0.014 inch
Rendezvous
Retrograde: Chevalier 14 Tapered 30g
→ Antegrade: Rubicon 0.018 inch
Sterling Rx 5.0 mm/220 mm
After the treatment

- Improvement of claudication
- Left ABI: 0.53 → 0.96
Discussion

• It’s generally difficult to use the transcollateral approach in the treatment of the SFA CTO.
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• It’s generally difficult to use the transcollateral approach in the treatment of the SFA CTO.

Ipsilateral antegrade approach
• A side-hole sheath features a side hole 7 cm from the tip.
• Antegrade guidewire crossing is performed through the side hole and the tip of the sheath is inserted in the DFA.
A side-hole sheath was very useful in the treatment of CTO of the SFA using a transcollateral approach.
Thank you for your attention
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