

popliteal artery was disappeared, and peripheral artery disease (PAD) was suspected. The pain at rest and any ulcer were not observed in his lower limb.

#### Relevant test results prior to catheterization:

The resting ankle brachial index (ABI) score of his left leg was boarder-line normal (Resting ABI: 0.91). The stress ABI score of his left leg revealed PAD (Stress ABI: 0.78). Doppler echo test for the left lower limb showed several intermediate stenoses (50% to 75% stenoses, PSV: 2.0~3.0 m/sec, PSVR: 1.0~2.0) in the superficial femoral artery (SFA). So endovascular therapy (EVT) was scheduled for the SFA lesions.

#### Relevant catheterization findings:

Initial angiogram revealed diffuse intermediate stenoses (50% to 75% stenoses) in the SFA. There were no stenoses in the aorto-iliac artery and in the infra-popliteal artery. So we performed physiological assessment of the SFA lesions with pressure wire (PressureWire Certus G7, St. Jude Medical, USA) during EVT to evaluate hemodynamic significance of these lesions and decide the end-point of the procedure. During the pull back of the pressure wire from distal SFA at hyperemia with papaverine injection, a focal pressure step-up was observed in the mid portion of the SFA.

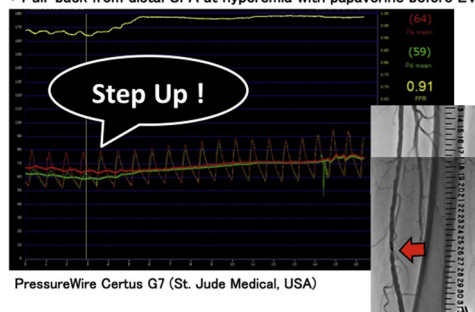
#### [Interventional Management]

##### Procedural step:

We performed balloon dilation and focal stent implantation (SMART Control™ 6.0\*60 mm, Cordis, USA) for the lesion with the pressure step-up. After stent implantation, the pressure step-up observed before EVT was disappeared, and we finished EVT procedure. After EVT, his claudication has disappeared, and resting ABI and stress ABI were improved to normal findings. Invasive physiological assessment in the cath lab might be available during EVT for diffuse intermediate stenoses in the SFA.

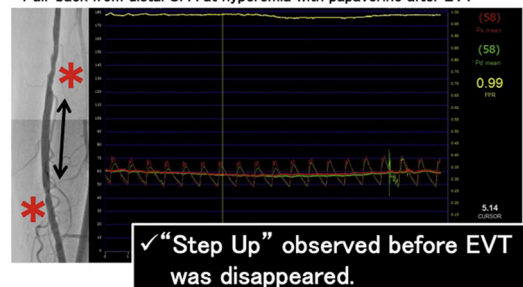
### Physiological Assessment before the EVT

✓Pull-back from distal SFA at hyperemia with papaverine before EVT



### Physiological Assessment after the EVT

✓Pull-back from distal SFA at hyperemia with papaverine after EVT



#### Case Summary:

The high restenosis rate after endovascular therapy (EVT) for the superficial femoral artery (SFA) lesions is remained clinical issue. The lesions in the SFA are often the diffuse intermediate stenoses and we are confused to how to treat these lesions in the daily practice. The strategy of full-covered stent implantation for the lesions with diffuse intermediate stenoses might be a high risk of in-stent restenosis because of the length of the stent. We think that it may be very important that EVT for non-significant SFA lesions could be differed with invasive physiological assessment during EVT. In this case, we performed invasive physiological assessment for diffuse intermediate stenoses in the SFA with pressure wire during EVT to evaluate hemodynamic significance of the lesions and decide the end-point of the procedure. According to the results of the physiological assessment, we performed a focal stenting for the lesion. After EVT, his symptom was disappeared and ABI score was improved to the normal finding. Invasive physiological assessment in the cath lab might be available during EVT for diffuse intermediate stenoses in the SFA.

#### TCTAP C-209

### Successful Endovascular Intervention for Bilateral Iliofemoral Very Long CTO Using Various Techniques - Tokeidai Style -

*Yuya Nakagawa*

*Tokeidai Memorial Hospital, Japan*

#### [Clinical Information]

##### Patient initials or identifier number:

K.1

##### Relevant clinical history and physical exam:

A 74-year-old female with severe claudication on the left limb and rest pain on the right was admitted to our hospital in June 2013. She had hypertension as a coronary risk factor and performed percutaneous coronary intervention for left anterior descending artery before admission to our hospital.

##### Relevant catheterization findings:

Baseline lower-limb angiography showed chronic total occlusions from bilateral external iliac artery (EIA) to superficial femoral artery (SFA), very long CTO. We performed three procedures for the right limb and two for the left.

#### [Interventional Management]

##### Procedural step:

Endovascular therapy (EVT) 1<sup>st</sup> session: A 18G puncture needle was inserted into the occluded right common femoral artery (CFA) retrogradely using body surface ultrasonography. We could cross the CTO lesion from EIA to CFA using microcatheter knuckle technique. A 4.5Fr guiding sheath was inserted into the right brachial artery and we made pull-through formation using Rendez-vous technique. After that, trans-collateral angioplasty (TCA) was performed using internal iliac artery, the cruise guidewire was advanced to deep femoral artery (DFA). After additional Rendez-vous, we could cross the CTO lesion from EIA to DFA. Then, one SMART stent was successfully deployed to EIA and percutaneous transluminal angioplasty (PTA) was performed to CFA-DFA.

EVT 2<sup>nd</sup> session: A 4.5Fr guiding sheath was inserted into the right brachial artery. A stiff guidewire was advanced into the SFA CTO lesion antegradely watching body surface ultrasonogram images. Yoko-Pun was performed to make bi-directional approach and the wires were rendezvoused. PTA was performed, but unfortunately SFA was ruptured because intravascular ultrasound (IVUS) image showed the wire was crossed to absolute edge of the adventitia. Hemostasis procedure was performed using balloon and thrombin injection around bleeding points.

EVT 3<sup>rd</sup> session: A 4.5Fr guiding sheath was inserted into the left brachial artery. We successfully performed IVUS guided SFA true lumen wiring, two SMART stent was deployed to SFA. We finished right lower limb revascularization.

EVT 4<sup>th</sup> session: A 4.5Fr guiding sheath was inserted into the right brachial artery. TCA and Rendez-vous technique were performed as with the right side, and finally the wire was crossed to DFA antegradely. One SMART stent was deployed to EIA and PTA was performed to CFA-DFA.

EVT 5<sup>th</sup> session: A 6Fr guiding sheath was inserted into the right SFA (contralateral retrograde SFA direct puncture). A stiff guidewire was advanced into the SFA CTO lesion antegradely watching body surface ultrasonogram images and successfully crossed to distal true lumen. Two SMART stent were deployed to SFA. We finished left lower limb revascularization. She was almost completely free from symptoms. We report a case of successful -Tokeidai Style- EVT for bilateral iliofemoral very long CTO.

#### TCTAP C-210

### Thoracic Endovascular Aortic Repair in Acute Descending Aortic Dissection: How Long Should We Cover the Lesion?

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*Vietnam National Heart Institute - Bach Mai Hospital, Vietnam*

#### [Clinical Information]

##### Patient initials or identifier number:

T.V.P

##### Relevant clinical history and physical exam:

A 54 year old man admitted due to acute severe chest pain for 2 days. CVD risk factor profile is uncontrolled hypertension

##### Relevant test results prior to catheterization:

ECG showed non-significant changes of ST/T. MSCT scan showed acute lesion at descending aortic dissected from left subclavian artery to both femoral artery.

##### Relevant catheterization findings:

Angiogram showed pulsatile false lumen of thoracic aorta and severe right pleural effusion.

#### [Interventional Management]

##### Procedural step:

Emergent stent graft was indicated due to renal ischemic and right pleural effusion (impending rupture??).

Many tips and tricks were applied to drive a catheter go in the true lumen from the femoral artery as the dissection twisted posterior-anterior around the true lumen. A pigtail from left radial artery was used as a landmark to locate the stent graft in proximal landing zone. Only one piece of tapered stent graft 32-28x160cm was deployed, covering the left subclavian artery. Final result on angiogram was fine. Patient discharged after 7 days without any chest pain. MSCT scan showed the improvement of perfusion in both kidneys. 25 days after 1st TEVAR, severe chest pain happened. He re-admitted to re-evaluate the 1st stent graft. MSCT scan found a patent false lumen, started at the distal end of the previous stent graft.