However, his symptom did not improve; rather it deteriorated as to rest pain and cyanosis. However, his symptom did not improve; rather it deteriorated as to rest pain and cyanosis. However, his symptom did not improve; rather it deteriorated as to rest pain and cyanosis. However, his symptom did not improve; rather it deteriorated as to rest pain and cyanosis. However, his symptom did not improve; rather it deteriorated as to rest pain and cyanosis.

Relevant catheterization findings:
Selective angiography of right VA showed steal phenomenon and left SCA total occlusion.

[Interventional Management]
Procedural step:
Combine femoral/bi-femoral approach was chosen. The femoral access was obtained with 8 French Judkin Right guiding catheter to proximal end through right femoral sheath and 6 French Judkin Right guiding catheter to distal end of left SCA occlusion through left radial sheath. Initially we tried re-trograde wiring with conquest pro (ASAHI INTECC) and Excelsior JL microcatheter (Boston Scientific) support. After several attempts, we could only pass the wire into the false lumen. We tried antegrade wiring with Ultimate pro 3 (ASAHI INTECC) and Excelsior support, and later with conquest pro and Excelsior support. Still, we could only get into the false lumen. We tried knuckle wire technique, and also failed to re-enter the distal true lumen. We tried controlled antegrade and retrograde subintimal tracking (CART) with Sprinter compliant balloon (Medtronic) 4.0 mm x 20 mm balloon inflation from retrograde, but antegrade wire could not get into the subintimal space created by retrograde balloon. We used simultaneous balloon inflation with two Sprinter compliant balloon (Medtronic) 4.0 mm x 20 mm from antegrade and retrograde. Finally the two subintimal spaces connected. We succeeded in retrograde wiring with conquest pro into the descending thoracic aorta. Balloon inflation with Sprinter compliant balloon (Medtronic) 4.0 mm x 20 mm to left SCA was performed, and antegrade wiring with conquest pro could be easily passed to distal end without resistance. An ASSURANT® COBALT (Medtronic) 7 mm x 30 cm x 130 mm was deployed. The final result is good.

TCTAP C-182
A Case of Iliac Artery FMD Treated by EVT with Pressure Wire and IVUS
Masahiko Fujihara
Kishiwada Tokushukai Hospital, Japan

[Clinical Information]
Patient initials or identifier number: MF
Relevant clinical history and physical exam:
A 71-year-old woman visited our institution complaining of fatigue in both legs after a 100 m walk for the past 6 months. Her medical history included chronic atrial fibrillation, hypertension, and well-controlled statin therapy with Amiodipine (5 mg/day). Her bilateral lower extremity pulses were weak. Her ankle-brachial index (ABI) was reduced to 0.85 on the right side and 0.80 on the left side. Based on these symptoms, the patient was diagnosed with typical peripheral artery disease (PAD) and severe (grade 3) claudication, according to the Rutherford classification.

Doppler echocardiography showed bilateral diffuse stenosis of the external iliac arteries. The Doppler waveforms were biphasic in both femoral arteries. Peak systolic velocity (PSV) was 259 cm/s in the right iliac artery and 309 cm/s in the left iliac artery. Furthermore, B-mode ultrasound images revealed unusual patterns of diffuse stenoses in both iliac arteries, with increased right and left PSV, which was suggestive of non-atherosclerotic iliac artery stenosis. These patterns were a similar to the short-term of stenosis in normal vessels, and the stenosis did not present intimal thickening, which is a typical characteristic of atherosclerotic diseases.

Recent test results prior to catheterization:
Three-dimensional computed tomography (3DCT) angiography showed multifocal stenoses with the classical "string of beads" appearance pattern in both external iliac arteries. Because of the "string of beads" pattern on iliac artery, Doppler echocardiography of the renal artery was performed, and bilateral mid-renal artery stenosis with elevated PSV in the right (218 cm/s) and left renal artery (258 cm/s) was observed.

Relevant catheterization findings:
Diagnostic angiography was performed to characterize iliac and renal artery stenosis. The renal artery angiogram exhibited the typical "string of beads" pattern in bilateral renal arteries, thereby confirming the diagnosis of bilateral renal artery FMD. The iliac artery angiogram also revealed the typical "string of beads" pattern in both external iliac arteries. The rows of ring-like stenosis reached 50%–75% of the normal vessel diameter, with enlargement in both external iliac arteries.

[Interventional Management]
Procedural step:
First, a 5 Fr 10 cm Radifocus sheath introducer was inserted in the left brachial artery, and 4000 units of unfractionated heparin was injected in the artery. Then, a 5 Fr 90 cm Destination guiding sheath was exchanged and advanced into the right common iliac artery. Once the 175 cm of 0.014 inch Cruise guide wire was positioned in close proximity to the "string of beads" pattern of the right iliac artery, IVUS was performed to locate the web-like membrane obstructing the lumen. Given the multiple stenosis sites, the pressure gradient across the FMD lesion was measured using a 0.014-inch Arix pressure wire. A peak systolic pressure gradient of 45 mmHg was measured between the aorta and the right common femoral artery. The FMD lesion most responsible for the significant stenosis was identified by IVUS imaging and pressure measurements. Then, angioplasty of the right iliac artery was performed with a 7.0 mm x 40 mm balloon and a 8.0 mm x 20 mm balloon inflated to a pressure of 8 atm. While angiographic improvement was not detected, the pressure gradient across the stenosis was eliminated. Furthermore, IVUS images showed a disrupted web-like membrane. Therefore, this procedure was repeated for the treatment of left iliac FMD.

TCTAP C-181
A Novel Technique for Percutaneous Transluminal Angioplasty to Subclavian Artery Occlusion
Jian-Yang Chiang, Hsien-Li Kao
National Taiwan University Hospital, Taiwan

[Clinical Information]
Patient initials or identifier number: initials: Z.S.L
Identifier number at National Taiwan University Hospital: 6021797
Relevant clinical history and physical exam:
This 61yo man had medical history of coronary atherosclerosis confirmed by angiography, hypertension, and had smoking habit. He found progressive left shoulder and arm numbness and weakness for 1 year. Left arm coolness and interarm pressure differences were noted at local clinics. Relevant test results prior to catheterization:
Duplex sonography revealed reversed flow in the left vertebral artery (VA) with monophasic waveform in the left subclavian artery (SCA), indicating stenosis in the left proximal subclavian artery with subclavian steal phenomenon.