MP-1 A case of bilateral highly calcified bilateral renal artery lesions with refractory heart failure treated by bi-stage PTRA and EVT

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【Case overview】
Previous RCTs have shown no advantage of percutaneous transluminal renal artery angioplasty (PTRA) over medical therapy for renal artery stenosis (RAS). However, observational studies have demonstrated the efficacy of renal artery stents in certain critically ill patients. We report here a case of a patient with bilateral renal artery stenosis who had a favorable outcome after PTRA. A 74-year-old woman was initially hospitalized for coronary artery bypass grafting (CABG) and mitral valvuloplasty (MVR). Even after CABG and MVR, the patient easily developed worsening heart failure.

【Procedure summary】
The patient had coral reef aorta around the renal artery, and severe stenosis at the origin of the bilateral renal arteries. The bilateral common iliac arteries were obstructed by nodular calcification. In the second session, the left renal artery was successfully dilated and stented. Later, EVT was performed for bilateral CIA-EIA lesions.

【Clinical time course and implication(or perspective)】
Postoperatively, renal function improved (Cre 2.5 to 1.5 mg/dL), furosemide dose could be reduced from 200 mg to 10 mg, NT-proBNP >35000 to 3000 pg/mL, and the patient had no worsening of heart failure after discharge. We report here the possibility that PTRA may be effective in the treatment of severe RAS with repeated heart failure and refractory hypertension.

MP-2 Effectiveness of trans-radial approach for emergency hemostasis at femoral arteries compared with trans-femoral approach

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【What's known?】
Background
Trans femoral approach (TFA) often causes puncture site related bleeding complications. Recently, we selected trans radial approach (TRA) to treat peripheral vascular lesions especially in iliac arteries and common femoral arteries. It is still unclear TRA is an effective way to stop puncture site related bleedings caused by transfemoral interventions.

【What's new?】
Methods
We evaluated 39 interventions performed to stop puncture-site related bleedings from January 2019 to December 2023. Primary endpoint was a success rate of hemostasis with no additional approach.
Results
16 interventions were performed by TRA and 23 interventions were performed by TFA. There was no difference between TRA and TFA about the success rate of hemostasis with no additional approach (n=TRA 75%, TFA 86%, p=0.42). In TRA cases, we needed 4 additional approaches from opposite common femoral arteries to insert stent grafts. The frequency of after procedure events such as hematoma, infection and rebleeding was similar in TRA and TFA(n=TRA 18.8%, TFA 13%, p=0.67).
Conclusion
Trans-radial approach showed equal results of hemostasis of puncture-site with trans-femoral approach. Trans-radial approach for puncture-site related bleeding is an attractive alternative way to trans-femoral approach.

MP-3 Clinical performance of spot DES for FP lesions in our institution

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【What's known?】
Recently, favorable outcomes have been reported for EVT (Endovascular Therapy) using DCB (Drug-Coated Balloon) in the FP (Femoropopliteal) region. However, a definitive consensus regarding the efficacy of spot DES (Drug-Eluting Stent) has not been established.

【What's new?】
A total of 273 consecutive cases underwent EVT for de novo FP lesions between 2019 and 2022 were enrolled in this study. Of these, 72 cases, treated with Ranger-DCB (82.9%) or a combination of DCB with spot DES (17.1%), were divided into two groups for analysis. The primary endpoint was the one-year Freedom from Target Lesion Revascularization (TLR) rate.
The mean lesion length was 192 mm in the Ranger-DCB group and 214 mm in the spot DES group (p=0.53). CTO cases were 35.7% in the Ranger-DCB group and 57.1% in the spot stent group (p=0.13). The rate of freedom from TLR was 73.8% for the Ranger-DCB group and 57.1% for the spot stent group (p=0.028).
The clinical outcomes of a combination of DCB with spot DES for FP lesions in our institution were insufficient compared to DCB alone.

MP-4 A case of chronic limb-threatening ischemia who underwent surgical thrombectomy for recurrent stent thrombosis

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【Case overview】
A 71-year-old woman was admitted to our hospital due to chronic limb-threatening ischemia. She was presented with unhealed gangrene of her right achilles tendon. A contrast-enhanced computed tomography showed total occlusion of the right proximal superficial femoral artery (SFA) to proximal popliteal artery (POP), and peroneal trunk.

【Procedure summary】
Endovascular therapy (EVT) for the SFA lesion was performed using a bidirectional approach via the right common femoral artery and dorsal artery. After passing the wire and ballooning, the SFA showed no reflow. Drug-eluting stents (DESs) were implanted from the proximal SFA to the middle POP. Five days after the operation, the stents were occluded. VIABAHN stent grafts were implanted in DESs. Two months later, split thickness skin grafting and negative pressure wound therapy were performed. Three months after EVT, covered stent grafts were totally occluded. Repeated POBA and thrombus aspiration were performed, but reperfusion was not obtained. Therefore, surgical thrombectomy was performed for bail-out. After thrombectomy, reperfusion was achieved and the wound was successfully healed.

【Clinical time course and implication(or perspective)】
Surgical thrombectomy is an essential treatment option for thrombosis after VIABAHN stent graft implantation.

MP-5 Development of a clinical and ultrasonic parameter based nomogram predictive model for the prediction of restenosis after superficial femoral artery stenting

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【What's known?】

Prediction of in-stent restenosis (ISR) is clinically important for patients with peripheral artery disease (PAD) in the superficial femoral arteries (SFA) who were treated with stenting. The aim of the study was to construct and validate a predictive model for ISR after SFA stenting based on a series of clinical and ultrasonic parameters.

【What's new?】

This retrospective study included 381 patients who were treated with self-expanding bare nitinol stents placement in SFA in our hospital. These patients were randomly allocated to a training cohort and a validation cohort. Clinical and ultrasonic parameters related to ISR (> 50%) in the SFA at 12 months were derived by the univariate and multivariate logistic regression analysis. The risk prediction nomogram model was constructed using the R 4.1.0 software package.

Logistic regression analyses revealed that sex, echo of the target plaque, preoperative arterial runoff score via the Society for Vascular Surgery criteria, preoperative popliteal artery flow rate, lesion length, and residual diameter were risk factors for ISR, which were used to construct the nomogram model. This novel nomogram for identifying ISR after SFA stenting demonstrated excellent discriminatory power, calibration capacity, and clinical usefulness.

MP-6 Pre-procedural color duplex ultrasound evaluation predicts restenosis after long-segment superficial femoral artery stenting

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【What's known?】

Restenosis after stenting for superficial femoral artery (SFA) atherosclerotic disease remains a significant clinical problem, especially for long-segment lesions. We assessed predictors of in-stent restenosis (ISR) in patients with long-segment SFA disease, and hypothesized that pre-procedural ultrasound assessment would predict ISR.

【What's new?】

This single-center study retrospectively analyzed 283 limbs in 243 patients who treated with SFA nitinol stent placement for long-segment (≥ 15 cm) lesions between 2015 and 2018. Color duplex ultrasound (CDU) was performed pre-procedure and post-procedure at 3, 6, 12, 24, and 36 months. The endpoint was ≥ 50% ISR in the SFA. Primary patency rates were analyzed with Kaplan-Meier survival analysis and compared using the log-rank test. A multivariable Cox proportional hazards model was used to evaluate the risk factors for ISR.

The results indicate that pre-procedural CDU evaluation is helpful for the selection of appropriate candidates for SFA stent placement. Cumulative lesion length ≥ 25cm, plaque calcification, poor distal runoff, and chronic renal failure independently predicted ISR.

MP-7 A case of long CTO in which the stent fractured at two sites due to overstretching deployment

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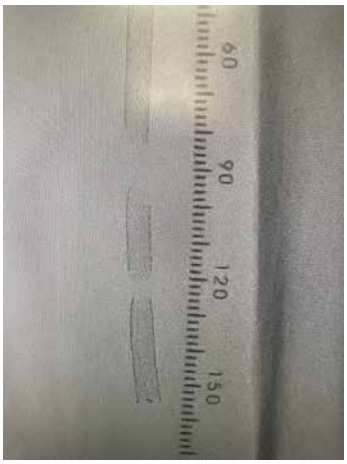
【Case overview】
A man in his 70s came to our department with a complaint of intermittent claudication of his left foot. Contrast-enhanced CT revealed chronic total occlusion (CTO) lesion in the two separate location (superficial femoral artery (SFA) and popliteal artery).

【Procedure summary】
Endovascular treatment was performed using two Eluvia (6.0*120mm) and low-dose DCB (6.0*60mm) with IVUS-guidwd wiring. Claudication resolved after treatment, but at his 12-month outpatient visit, a recurrence of claudication was found. During the interview, it was found that the patient had self-interrupted antiplatelet medication. Angiography was performed again, suspecting re-occlusion of the treated area due to drug discontinuation, and the stent in the treated area had re-occluded, but the distally implanted stent had fractured in two places. Eluvia was re-implanted to cover the fractured stent.



【Clinical time course and implication(or perspective)】
Retrospective evaluation showed that the distal stent was stretched and implanted when covering the whole SFA-CTO lesion with a stent during the initial treatment (about 25% elongation), which may have caused the fracture.
Although stenting in the treatment of SFA long CTO lesions may be limited in terms of the number of stents from an insurance perspective, overstretching of the stent during stenting should be considered as a potential cause of structural failure.

MP-8 Retrograde In-situ Fenestration of Left Subclavian Artery using BeBack Crossing Catheter and Physician-Modified Steerable Sheath for Treatment of Complicated Type B Aortic Dissection

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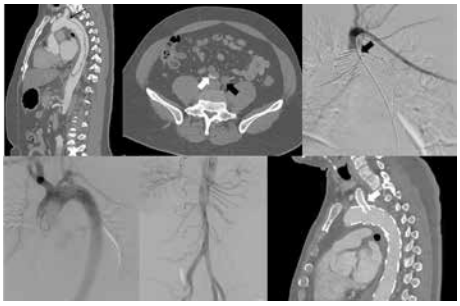
【Case overview】
43-year-old male presented with back pain and ischemic left lower limb. CT angiogram demonstrated complicated type B aortic dissection with entry tear at the left subclavian artery (LSA), extending to the bilateral iliac arteries with absent distant flow in the left limb.

【Procedure summary】
Urgent thoracic endovascular repair (TEVAR) was indicated. Proximal landing in Ishimaru Zone 2 was required for adequate seal. In-situ fenestration to preserve the LSA was performed to reduce risk of arm ischemia and stroke. Zenith TX2 Endograft was deployed in Zone 2, covering the LSA. BeBack crossing catheter was used for thoracic stent-graft re-entry to create an in-situ fenestration, with sequential balloon dilatation followed by 10.0x37mm BeGraft stent-graft for bridging. Physician-modified steerable sheath was required for steerability of crossing catheter. Entry tear was successfully sealed and thoracic stent was extended with Zenith Dissection stent. Bilateral common iliac 8mm BeGraft stent-grafts were used to reperfuse the lower limbs.



【Clinical time course and implication(or perspective)】
Early post-operative CT showed persistent leak, requiring extension of LSA stent with additional 8.0x57mm BeGraft. Patient recovered fully with no symptoms. CT at 6-months shows no leak or complications. The techniques described are useful in emergent situations for LSA preservation in TEVAR when custom-made devices are not readily available.

MP-9 Stent placement for iliac vein occlusion/DVT displaced by tumor

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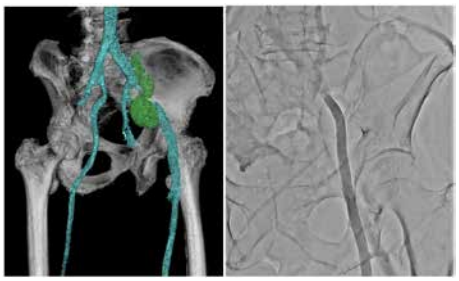
【Case overview】
The 78 year old man with prostate cancer lymph node metastasis. His left iliac vein was compressed by the swollen lymph nodes and tumor, resulting in acute DVT, which resulted in stasis and swelling of the left lower leg, making it difficult to walk. We attempted to improve the condition with endovascular treatment.

【Procedure summary】
[Methods]
Thrombus aspiration was repeated 45 times using a 6Fr guiding catheter. Afterwards, the flow limit of the tumor exclusion area was also confirmed with balloon expansion. Therefore, a self-expanding stent was placed to obtain good blood flow. Postoperatively, anticoagulant therapy was continued. Final angiogram was shown in Figure.
[Results]
All of the massive DVT disappeared and he was discharged from the hospital. Radiation therapy was given to the lymphnodes and enlarged tumor.



【Clinical time course and implication(or perspective)】
In the treatment of symptomatic iliofemoral venous outflow obstruction, it is useful to place a self-expanding stent in the iliofemoral vein to secure the venous lumen.

MP-10 Withdrawn