
Presentation Awards

[L1-1] Presentation Awards

Moderators: Shigeru Nakamura (Kyoto Katsura Hospital) , Chung-Ho Hsu (Cardiology, China Medical University Hospital, Taiwan)

Panelists: Min Ku Chon(●●●●●●), Kojiro Miki (Hyogo Medical University)

2020年2月21日(金) 09:00 ~ 10:30 Hall L-1 (Exhibition)

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-1] Hybrid endovascular revascularization of TASC-D Aortic occlusion in an old monk with ischemic cardiomyopathy

Jaroen Cheewinmethasiri (Lampang hospital)

Case overview

A 78 year-old monk with history of CAD and LV dysfunction, HT present with severe disabling claudication both legs for 8 months. ABI of Rt. leg and Lt. Leg were 0.53 and 0.51. CTA showed total occlusion of infrarenal aorta and CTO of bilateral common iliac artery with severe stenosis of bilateral CFA.

Procedure summary

We tried to access from bilateral CFA first via cutdown technique. We used command 18 wire supported with pacific PTA balloon to pass retrogradely from bilateral CFA. But wire can passed through the occlusion only from Rt.side. Command 18 wire was substituted with supracore guide wire. So, we accessed from Rt. brachial artery (cutdown) via 6 Fr long sheath. We tried to use 0.035 hydrophilic guidewire to make loop by continually rotating and advancing guidewire, 5-Fr catheter and 6 Fr. Long sheath subintimally through the occlusion into Lt.CFA. But hydrophilic wire cannot pass into Lt.CFA. So, CARRT technique was used. After that, hydrophilic guide wire was substituted with supracore wire. CERAB concept was applied in this situation. Abdominal aorta and bilateral iliac artery were predilated with Admiral balloon then Begraft stent graft was deployed below Lt. Renal artery. And then, Begraft were deployed in bilateral CIA. Everflex stent were deployed in bilateral EIA. Bilateral common femoral endarterectomy were made and bilateral CFA were patched with saphenous vein.

Clinical time course and implication

Completion angiography showed technically successful of this hybrid revascularization. CTA at 3 month & 11 month after operation show patent all of the stent. Hybrid revascularization is safe for TASC-D AIOD with good early outcome.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-2] 2 Case of DRA approach EVT using 0.014 system

Tsuyoshi Takeuchi, Yuichi Kojima, Hiroshi Horii, Hiroaki Koiwa, Daisuke Ikeda (Chitose City Hospital)

Case overview

2 males of 60s with claudication

Procedure summary

In Case①②, we performed Lt.DRA puncture and used 4.5Fr Sheathless Guiding(medikit®?) 120cm R1 type. Target lesion : In Case①, Bi. External Iliac Artery(EIA). In Case②, Rt.EIA, Lt.Common Femoral Artery(CFA) and Lt.Subcravian Artery(SCA).

Clinical time course and implication

DRA approach EVT is minimum invasive procedure !. Because patients can sit on a chair and write letters even while hemostasis.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-3] The case of successful use of GORE VIABAHN VBX for the coarctation of aorta.

Nobuo Ishiguro¹, Hidekazu Aoyama¹, Shin Hasegawa¹, Masayuki Nakamura¹, Shingo Yoshioka¹, Akimitsu Tanaka¹, Kazuo Katou¹, Ryosuke Kametani¹, Miyuki Ando² (1.Nagoya Tokusuyukai General Hospital Department of Cardiology, 2.Ogaki Tokusuyukai Hospital Department of cardiology, 3.Ogaki Tokusuyukai Hospital Department of cardiology)

Case overview

A 75-year-old female with bilateral intermittent claudication (Rutherford-3). She had a history of arterial hypertension at the age of 70, with difficult control of blood pressure under treatment. Her ABI was 0.86/0.86. Enhanced CT showed severe calcification and stenosis in the thoracic aorta, but there were no stenosis elsewhere. Peak-to-peak coarctation gradient in the catheter was 80 mmHg. Generally, stent was used for treatment of the coarctation of aorta in the elderly, we planed to use GORE VIABAHN VBX in terms of safety when ruptured and invasiveness.

Procedure summary

The procedure was performed under local anesthesia. After inserting 8Fr sheath in right femoral artery and placing EGOIST wire, we deployed VIABAHN VBX11×59mm and dilatated stent edge by using balloon. But VIABAHN was recoiled, so we deployed VIABAHN VBX11×39mm to prevent recoil and strengthen radial force. Finally, peak-to-peak coarctation gradient was decreased.

Clinical time course and implication

After EVT, her ABI was 0.89/0.84, but bilateral intermittent claudication improved to prominent, and her systolic blood pressure decreased 180mmHg to 100mmHg, and reduced the dose of anti-hypertensive drug. We report a case of successful use of GORE VIABAHN VBX for the coarctation of aorta with a review of the literature.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-4] A Drowning SMA Syndrome Case with Leriche Syndrome

Hiroaki Matsuda, Ai Kagase, Takahiro Tokuda, Yusuke Ochiumi, Akira Murata, Yoriyasu Suzuki, Tatsuya Ito (Nagoya Heart Center)

Case overview

70s male with peritoneal irritation signs

Procedure summary

From left brachial access, a guiding catheter (6Fr britetip JR4.0SH, Cordis) was engaged and endovascular therapy (EVT) was started. A 0.035 inch guidewire (RADIFOCUS 1.5mm type J 260cm, TERUMO) was crossed with a microcatheter (CXI 4.0Fr ST, COOK) and changed for a floppy wire (Cruise 235cm, ASAHI INTECC). After that, thrombectomy (Eliminate+, TERUMO) and ballooning (Senri 4.0/40, TERUMO→JADE 6.0/80, Orbis Neich) was repeated and enough blood flow could be confirmed. Moreover, much papaverine was

injected for the SMA through the CXI microcatheter. After these procedure, the stomachache and results of blood gas analysis was improved.

Clinical time course and implication

3 days after the EVT, the patient was transferred to other hospital for small intestine resection. 4 months after the operation, he was discharged in good condition. In this case, the fogarty thrombectomy could not be performed because of coexisting leriche syndrome. This is one option and should be considered for SMA syndrome as usual.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-5] Remarkable inflammation after implantation of VBXs to calcified and tortuous iliac artery in patient with rheumatoid arthritis.

Kentaro Mine, Keisuke Ueno, Souki Inoue, Hidetada Fukuoka, Hirooki Inui, Tomoko Minamisaka, Yukinori Shinoda, Koichi Tachibana, Shiro Hoshida (Yao Municipal Hospital)

Case overview

A 80-year-old man having rheumatoid arthritis was suffered from intermittent claudication of Rutherford class II. Angiography of lower limb arteries revealed high-grade stenosis of calcified and tortuous right external iliac artery.

Procedure summary

One month later, we performed endovascular therapy for the stenotic lesion of external iliac artery and implanted VBX. Then we found an aneurysm of right common iliac artery which had not existed at the initial angiogram. So we underwent second endovascular treatment two weeks later. We performed coil embolization to the right internal iliac artery and implanted VBX to the common iliac artery covering the aneurysm.

Clinical time course and implication

Next day, the patient became feverish and presented inflammatory reaction. Whole body computed tomography revealed the mass around VBX. Since there was no evidence of bacterial infection and endoleak of stentgrafts, we considered the possibility of post implantation syndrome as the cause of inflammation. Then we started to administer steroids (prednisolone 40mg/day) and succeeded in controlling inflammation. We realized the effect of steroid to the inflammation of post e-polytetrafluoroethylene covered-stent implantation, and report this case with some bibliographical consideration.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-6] Percutaneous endoluminal anatomical bypass (PEA pass) technique for patients with external iliac artery occlusion after failed conventional endovascular recanalization.

Makio Muraishi, Tatsuya Nakama, Yuta Azumi, Junya Arai, Kenta Ishibashi, Syunsuke Kojima, Hiroya Takafuji, Hiroshi Okumura, Kotaro Obunai (Tokyo Bay urayasu ichikawa medical center)

Case overview

A 76-year-old hemodialysis male, with a history of colostomy was admitted to our hospital with chronic limb ischemia (toe gangrene) due to left EIA and below-the-knee (BTK) occlusion. During previous colostomy, his left EIA was accidentally ligated. Conventional endovascular therapy was performed but failed because any guidewire couldn't pass the ligated EIA, and femoral-femoral (F-F) bypass was performed as an alternative

therapy. His gangrene was improved but few weeks later, surgical site infection (SSI) was occurred, which was uncontrollable with antibiotics. Before infected graft removal, **Percutaneous Endoluminal Anatomical Bypass (PEApass)** procedure was demonstrated.

Procedure summary

In the distal, arterial-venous (AV) fistula was created using re-entry device. In the proximal, AV fistula was created using a 0.014-inch guidewire. Proximal 0.014-inch guidewire was snared using retrograde snare at the inside of iliac vein. An 8.0x100mm stentgraft was implanted at proximal to distal iliac artery through the iliac vein. In final angiogram, occluded iliac artery flow was completely restored without any complications.

Clinical time course and implication

After the *PEApass* procedure, infected graft was removed. Complete wound (gangrene and SSI) healing was achieved at about 1 month. A novel *PEApass* technique is a feasible option for uncrossable iliac occlusions.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-7] A successful bail-out case from acute limb ischemia which recurred with a short interval

Kenshi Ono, Tetsuya Nomura (Kyoto Chubu medical center)

Case overview

An 86-year-old man who had a medical history of paroxysmal atrial fibrillation without anticoagulant therapy complained of paresthesia and paralysis in his left lower thigh with a sudden onset. Contrast enhanced computed tomography showed total occlusion in the left distal superficial femoral artery (SFA) in addition to a shaggy aorta and a severe stenosis in the left external iliac artery (EIA).

Procedure summary

We targeted the SFA occlusive lesion via ipsilateral approach, and successfully revascularized it with a thrombus aspiration and a balloon dilation. Upstream revascularization in the left EIA stenosis was scheduled, but four days after the initial session, acute limb ischemia recurred with subtotal occlusion in the left EIA and total occlusion in the left SFA. Then, we first recanalized the subtotal EIA lesion using two bare nitinol stents via bidirectional approach. Next, we performed reverse catheterization technique of the SFA, and succeeded in revascularization using a stent graft.

Clinical time course and implication

One of the essential causes of recurrent occlusion in the SFA in a short interval was thought to be due to unperformed upstream revascularization. Therefore, we have to fully examine the strategies in endovascular treatment for those cases of multi-vessel involvement.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-1)

[MO-8] Endovascular management for a ruptured iliac artery with severe tortuosity

Kento Fukui, Masahiro Koide, Tatsuya Kitada, Masaya Kogure, Yukinori Kato, Koji Sogabe, Hiroki Kitajima, Satoshi Akabame (Kyoto Okamoto Memorial Hospital)

Case overview

An 80-year-old female presented to our hospital with a chief complaint of disturbance of consciousness.

Head CT revealed subarachnoid hemorrhage. The next day, coil embolization was performed for a ruptured cerebral aneurysm

by neurosurgeon. After the procedure, the blood pressure rapidly fell despite the continuous administration of a large amount of catecholamine and transfusion. Emergent abdominal CT revealed severe intra-abdominal hemorrhage due to rupture of the right external iliac artery.

Procedure summary

After aortic blockage using an intra-aortic balloon occlusion catheter, the right femoral artery was punctured with echo guidance, and a 7-Fr sheath was inserted. Angiography revealed the bleeding site from the iliac artery. After guide wire passage, we delivered an 8.0/100-mm stent graft (VIABAHN TM), and aimed to deploy it. We could not deploy the stent graft due to severe bending of the iliac artery. We therefore changed the wire to Radifocus TM stiff wire, and deployed a 8.0/59 mm of balloon expandable stent graft (VBX TM) and successfully covered the ruptured iliac artery, resulting in complete hemostasis.

Clinical time course and implication

The hemodynamics was stabilized. Herein, we describe the tips and pitfalls of endovascular management for a ruptured iliac artery with severe tortuosity.

Presentation Awards

[L2-1] Presentation Awards

Moderators: Hitoshi Anzai (SUBARU health insurance Ota Memorial Hospital) , Carlos Mena (Cardiology, Yale University School of Medicine, US)

Panelists: Yasuto Hoshino (Fukushima Dai-Ichi Hospital) , Fenghe Li (1st Affiliated Hospital of Chongqing Medical University)

2020年2月21日(金) 09:00 ~ 10:30 Hall L-2 (Exhibition)

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-9] A successful limb salvage by endovascular treatment for native long chronic total occlusion in critical limb ischemia due to bypass graft failure

Yu Sakaue, Tetsuya Nomura, Satoshi Tasaka, Kenshi Ono, Naotoshi Wada, Natsuya Keira, Tetsuya Tatsumi (Department of Cardiovascular Medicine, Kyoto Chubu Medical Center)

Case overview

A 78-year-old man, who had undergone aorto-femoral bypass in his left leg seven years previously, was admitted to our hospital for refractory ulcerations on the left lower extremity. The past angiography revealed good patency of the bypass graft from aorta to deep femoral artery. This time, computed tomography angiography showed occlusion of the aorto-femoral bypass, in addition to native long chronic total occlusion from external iliac artery (EIA) to superficial femoral artery (SFA). We performed endovascular treatment (EVT) for this native occlusion.

Procedure summary

We started EVT via bidirectional approach from left brachial and popliteal arteries, and successfully passed an antegrade guidewire to the retrograde sheath in the popliteal artery. Then, we deployed two VIABAHN endoprostheses in the SFA and a bare nitinol stent in the EIA via the right common femoral artery. In the second session, we recanalized the occlusion of below-the-knee artery. Through multidisciplinary treatment, refractory ulcers in the left lower limb healed favorably.

Clinical time course and implication

We previously adopted a bypass surgery for the treatment of this TASC II type D lesion. However, with the progress in the results of EVT in this field, EVT can become a promising option in such a complicated peripheral artery disease.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-10] Successful revascularization for bilateral iliac thrombosis presenting with acute limb threatening ischemia

Kuniyasu Ikeoka, Li Jun, Abdullah Abdullah, Younes Ahmad, Zacharias Michael, Shishebor Mehdi (University Hospitals Cleveland Medical Center)

Case overview

A 70s male who suffered from acute motor and sensory deficit of left lower extremity was emergently taken to cath lab. Previously he presented with peripheral artery disease and treated two times by fem-fem bypass. Following failure of the bypasses, he was attempted to treat by endovascular therapy at other hospital and his symptom deteriorated as a consequence. Diagnostic angiogram revealed the bilateral common iliac arteries

were totally occluded. There was a definite evidence of acute thrombotic occlusion, as previous images demonstrated the right external iliac artery and the fem-fem bypasses were chronically occluded.

Procedure summary

Subsequently we performed revascularization of the left leg with left brachial approach. The guidewire was successfully traversed into popliteal segment. AngioJet Solent Omni was used to perform several runs of thrombectomy in the iliac arteries and proximal SFA. We noted residual clot burden in the BTK vessels. Therefore, we performed angioplasty for TP trunk and peroneal artery subsequent to administration of tPA. We additionally performed interventions of the iliac to popliteal arteries for residual stenosis.

Clinical time course and implication

Eventually his symptoms were resumed right after thrombectomy. We elected to treat the right iliac artery thrombosis, because motor and sensory deficit was not observed in the right leg.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-11] Another extravasation after sealing of iliac artery perforation

Yucheng Chang (Asia University Hospital Taiwan)

Case overview

68 year old male with history of DM and Af was admitted for unhealed wound over bilateral feet

Procedure summary

Diagnostic angiography with right radial artery approach showed critical stenosis in left iliac artery, diffuse stenosis in left superficial femoral artery and total occlusion of left peroneal artery and posterior tibial artery. One small branch of right iliac artery was injured by Terumo 0.035 wire and big contrast extravasation was noticed immediately when we were trying to insert cross-over long sheath from right common femoral artery. Right iliac artery was covered with Viabahn with residual dissections in right distal external iliac artery common femoral artery. Acute stent thrombosis developed on post PTA day2. Right Iliac artery and proximal common femoral artery was rescued after stenting. Because of the thrombosis event and some residual dissection in right superficial femoral artery, LMWH was used for one dose after the procedure. The patient had unstable hemodynamic status and His Hb dropped from 11.2 to 8.2 on post PTA day2. we found a huge hematoma in abdominal CT scan. Emergency SMA angiography revealed several contrast extravasations in branched of right colic artery. We embolized vasa rectal of right colic artery with 2 coils. Bleeding and general condition improved gradually after the procedure.

Clinical time course and implication

Follow-up angiography of right iliac artery was good and we completed PTA for total occlusion of right superficial femoral artery 6 months later. Sometimes life-threatening bleeding happens after PTA, we need to review the angiography and check the puncture site carefully. In our case, spontaneous bleeding in right colic artery developed after dual platelet agents and LMWH use. Timely identification of the bleeding site (procedure related or not procedure related) and sealing the bleeder are the only ways to save the patient.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-12] A ruptured popliteal artery aneurysm treated with stentgraft implantation and coil embolization

Shunsuke Kojima, Tatsuya Nakama, Kotaro Obunai (Tokyobay Urayasu Ichikawa Medical Center)

Case overview

Popliteal artery aneurysms (PAA) rarely rupture. Here, we report a case of successful treatment with stentgraft implantation and coil embolization for ruptured PAA. An 86-year-old woman with a history of stroke presented with severe pain in her right leg. Ruptured PAA was revealed by computed tomographic (CT) scan. She was in shock status and her right leg was massively swollen and tense.

Procedure summary

An emergent endovascular therapy (EVT) was performed and angiogram showed ruptured PAA (26x28mm, Figure A). Because a guidewire could not be advanced by antegrade approach, retrograde approach from anterior tibial artery (ATA) was obtained for lesion crossing. Before the stentgraft implantation, 4 coils were subsequently deployed inside the aneurysm to prevent it from further expansion due to end-leak. A 5x50mm stentgraft was deployed to exclude the aneurysm and self-expand nitinol stent was placed from the proximal ATA to inside of the stentgraft. Then fasciotomy was performed for clinical suspicion of acute compartment syndrome; tense, firm compartment and rapidly progressing pain. A final angiogram showed no residual flow into the aneurysm (Figure B) and excellent downstream flow.

Clinical time course and implication

The patient had an uneventful postoperative course and was transferred to another hospital for further rehabilitation.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-13] Occluded vessel puncture as new approach site

Takehiro Yamada, Daizo Kawasaki, Kunihiro Nishian, Masahiro Yamagami, Masashi Fukunaga, Tsuyoshi Nakata (Morinomiya Hospital)

Case overview

Selection of appropriate approach site is important to achieve successfully recanalization for complex occluded lesion. Although patent vessel is generally used as approach site, some case is difficult anatomically and/or technically. Therefore, we would like to introduce the method of occluded vessel puncture as a new approach site.

Case was 80s female with 1st toe non-healing ulcer. Angiogram showed multi-segmental disease beyond Aorta.

Procedure summary

1st EVT was conducted for Aorta to DFA occlusion. After failed antegrade approach via brachial artery, we punctured occluded FP bypass with ordinary puncture kit. After inserting 6Fr sheath, we could recanalize Aorta to CFA by IVUS guided technique. Finally, we succeeded recanalization from Aorta to DFA after additional EVT for DFA.

2nd EVT was conducted for popliteal to BTK lesion without SFA recanalization due to the anatomical issue of CFA and good collateral from DFA. We punctured antegradely occluded middle of SFA by using 20G needle and 0.018-inch Command wire with fluoroscopic guidance. After inserting 6Fr sheath, we succeeded re-entry to popliteal artery by OUTBACK system. Finally, we could get complete revascularization below the popliteal artery.

Clinical time course and implication

Her wound completely healed after toe amputation.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-14] Successful bail-out case from perforation in CLI with severe calcified lesion

Takuma Tsuda (Nagoya Ekisaikai Hospital)

Case overview

60s male with ischemic multiple toe gangrene (W1, I2, FI2, Wifi CS4)

Procedure summary

1. Set up retrograde system (microcatheter) with distal puncture at ATA.
2. Set up ipsilateral system via left CFA artery(6Fr).
3. Retrograde wiring (Jupiter FC, Vassallo floppy, Cruise, XT-PV) was successfully navigated but micro catheter (Ichibanyari PAD2) was difficult to pass CTO due to severe calcification. After ballooning with OTW (RYUJIN 1.2/10) retrogradely, micro catheter (Corsair Armet) could get into CTO.
4. Antegrade wiring with hard-stiff wire (Naveed 15, 30, 50, JupiterMAX, Jupiter tapers 45, Vassallo G40) and CROSSER was difficult to navigate true lumen due to calcification with parallel wire technique or IVUS guided technique.
5. Retrograde knuckle wiring with Command only progressed, and succeeded to rCART and externalization. However antegrade IVUS showed that externalized wire exist outside vessel in POP. Stentgraft (Viabarhn) could diminish the chance of revascularization of PTA or Peroneal artery. So I decided to re-wiring.
 - a) After another wire was navigated from retrogradely with DLC (Crusade PAD), retrograde rewiring with hard-stiff wire was succeeded navigated into intra-vessel with antegrade IVUS guidance on externalized wire.
 - b) antegrade rewiring was also succeeded to navigated intra-vessel.
 - c) antegrade wire passed CTO with rendez-vous technique in subintimal space.
6. Short stent was implanted into POP (LIFESTENT SOLO6.0/40) and ATA (PALMAZ GENESIS4.0/18) lesion due to severe recoil with calcification.
7. One straight line was created.

Clinical time course and implication

After another retrograde guide-wire navigation with DLC, retrograde re-wiring with antegrade IVUS guidance could be useful technique for complexed situation.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-15] A novel endovascular technique for acute limb ischemia in the non-stenting-zone — Acute Limb Ischemia using Guide Extension Catheter And Thrombolysis (ALIGATO) technique

Haruya Yamane, Ryo Araki, Tomohiko Goda, Naoko Miyazaki, Kei Tanaka, Fumi Sato, Atsushi Doi, Takayuki Yamada (Otemae Hospital)

Case overview

An 83-year-old female was admitted to our hospital with acute limb ischemia (ALI) in her left leg.

Procedure summary

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The angiography showed a thrombotic obstruction of the left popliteal artery. The thrombus was too large to be aspirated or dilated by angioplasty, and a thrombectomy was also not applicable in this lesion. Therefore, we performed “Acute Limb Ischemia using the Guide Extension Catheter And Thrombolysis (ALIGATO) technique”. After evaluating the occluded lesion by IVUS and angiography, we delivered a guide extension catheter to fully cover it. Since it plays a role of a long-covered stent, the blood flow to the distal tibial arteries could be confirmed. After a thrombolytic drug was administered intra-arterially for a few days, we removed the guide extension catheter. The angiography showed a reduction of the thrombus and the revascularization was achieved. She was discharged without any additional interventions or complications.

Clinical time course and implication

It is still difficult to treat ALI in the non-stenting zone such as the popliteal artery. We will describe a novel endovascular technique for ALI in the non-stenting zone using a guide extension catheter and thrombolysis. This technique can be considered one option of treatment for ALI in the non-stenting zone.

(2020年2月21日(金) 09:00 ~ 10:30 Hall L-2)

[MO-16] Angioscopy and optical coherence tomography revealed a low limb vessel stenosis caused by plaque rupture.

Satoshi Suzuki, Akinori Sumiyoshi, Hirokazu Tanaka, Kouta Tanaka, Masato Ishikawa, Hiroyuki Nagai, Satoshi Watanabe, Mutsumi Iwamoto, Atsunori Okamura, Kenshi Fujii (Sakurabashi Watanabe Hospital)

Case overview

A 84-year old female was admitted to our hospital due to intermittent claudication for 1 month. She had hypertension as a risk factor. Left ankle brachial index (ABI) showed 0.82 and lower limb ultrasound revealed stenosis in the left superficial femoral artery (SFA). The low limb angiography revealed the stenosis length of the left proximal SFA was approximately 2cm.

Procedure summary

The reason of the stenosis was due to plaque rupture, because the angioscopy revealed disappearance of the continuous vessel wall at the stenosis site, on the other hand optical coherence tomography (OCT) showed cavity which contained lipid rich plaque. After we performed plain old balloon angioplasty (POBA), angioscopy revealed hemorrhage which can cause stenosis or occlusion was not detected at the culprit lesion. Therefore, acute gain was assured POBA and stent implantation was not performed. Drug coated balloon angioplasty was done to prevent neointimal hyperplasia proliferating at the culprit lesion.

Clinical time course and implication

Angioscopy and OCT imaging revealed the cause of the stenosis at the left SFA was due to plaque rupture.

Presentation Awards

[L1-2] Presentation Awards

Moderators: Keisuke Hirano (Saiseikai Yokohama City Eastern Hospital) , Donghoon Choi(Cardiology, Yonsei University Severance Hospital, Korea)

Panelists: Makoto Yamaura (Kizawa Memorial Hospital) , I-Ming Chen (Vascular Surgery, Taipei Veterans General Hospital, Taiwan)

2020年2月21日(金) 10:30 ~ 12:00 Hall L-1 (Exhibition)

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-17] A novel strategy for a common femoral artery iatrogenic pseudoaneurysm: Manual compression with pseudoaneurysm decompression by ultrasound-guided puncture and aspiration

Daisuke Ueshima, Kenji Yoshioka, Hironobu Sumiyoshi, Tetsuya Kobayashi, Takuya Kawakami, Yuki Shimizu, Hirofumi Otani, Akihiko Matsumura (Kameda Medical Center)

Case overview

3 consecutive cases of common femoral artery iatrogenic pseudoaneurysms

Procedure summary

We punctured and aspirated the pseudoaneurysm to decompress it under ultrasound guidance. Next, we compressed the pseudoaneurysm manually from the skin surface. Pre- (on upper side) and post- (on lower side) procedural angiographies of those 3 cases were shown in Figure.

Clinical time course and implication

All of those 3 pseudoaneurysms were occluded in only 20 minutes of compression.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-18] Specific IVUS findings in endovascular treatment for traumatic femoral artery occlusion

Koji Sogabe, Masahiro Koide, Tatsuya Kitada, Masaya Kogure, Kento Fukui, Yukinori Kato, Hiroki Kitajima, Satoshi Akabame (Kyoto Okamoto Memorial Hospital)

Case overview

An 60-year-old male had a fall accident during work using heavy equipment and was transported to our emergency department 9 hours after occurrence. Computed tomography revealed open fracture of the right femur and disruption of the superficial femoral artery (SFA). Endovascular treatment for the occluded SFA was planned to perform after stabilizing his general condition due to mild cyanosis of the affected leg.

Procedure summary

An angiography showed occluded SFA, and the deep femoral artery providing collaterals to distal SFA. While passing through the total occlusion by using knuckle wire technique, intravascular ultrasound (IVUS) revealed lack of vascular media structure in the total occlusion. Advancing the IVUS catheter, the normal medial vascular structure was confirmed near the exit of the obstructed lesion, however the IVUS catheter was in subintimal space. Therefore, the stiff wire was inserted into the true lumen using the IVUS guidance. Furthermore, there was still concern about extravasation after recanalization, a stent graft (VIABAHN™) was

implanted in the occluded SFA.

Clinical time course and implication

After revascularization, his general condition was stabilized and cyanosis of his leg was improved. We herein report specific IVUS findings in endovascular treatment for traumatic SFA injury.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-19] Pseudo-aneurysm due to “sub-acute” stent fracture

Keisuke Nakabayashi, Shinya Hata, Nobuhito Kaneko, Akihiro Matsui, Kazuhiko Tanaka, Hiroshi Ando, Minoru Shimizu (Kasukabe Chuo General Hospital)

Case overview

70s male with critical limb ischemia. He had had endovascular therapy (EVT) for his right superficial femoral artery (SFA) using OUTBACK and SMART stent 2 years before current admission. His wound got worse due to the in-stent restenosis of the SFA.

Procedure summary

We succeeded the EVT to the right SFA using drug-coated balloon (IN.PACT Admiral 6.0x150, 6.0x120mm). No stent fracture was seen in the final angiography. The follow-up echocardiography 3 weeks after previous EVT indicated no in-stent restenosis, but a saccular aneurysm (26x18x16mm) in the proximal stent site. Though the patient had no significant symptom, D-dimer and fibrin degradation products were high level. The angiography also confirmed a large pseudo-aneurysm with severe stent fracture. VIAVAHAN 6.0x100mm was deployed from proximal stent site to the proximal SFA to completely cover the aneurysm.

Clinical time course and implication

No restenosis nor recurrent of an aneurysm were observed; however, the patient suffered from poor control of the foot ulcer and infection. Finally, he died of pneumonia and acute respiratory distress syndrome. A dilatation of the stent implanted 2 years ago using a drug-coated balloon causes sub-acute stent fracture, which also induces a pseudo-aneurysm.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-20] Where to put sheath in when neither ipsilateral CFA nor contralateral CFA is not possible.

Wacharaphong Pitaksantayothin (Faculty of Medicine Vajira hospital,)

Case overview

63 year-old man underwent femero-femoral bypass, right CFA endarterectomy, balloon angioplasty and stenting of right external iliac artery and distal SFA, catheter directed thrombolysis(CDT) from three operations. He has had acute-onset right leg pain and dry gangrene of big toe for 1 month. CTA, in figure, showed thrombosis along right SFA to popliteal artery, occlusion of left iliac artery and bypass graft.

Procedure summary

Mid SFA was punctured retrogradely into thrombus to insert 4-Fr sheath. Small piece of thrombus was aspirated. Hard end of Terumo wire penetrated upward through organized thrombus. CDT failed. SFA was opened with 4Fr 4mm balloon. Six-Fr sheath couldn't be inserted antegradely in ipsilateral CFA due to previous scar and big belly, then was placed in proximal SFA. Wire couldn't passed downward through distal SFA. Posterior tibial artery(PTA) was puncture retrogradely. With CART, reversed CART, double CART and

rendezvous technique, Command-18 wire with Rubicon catheter from foot was snared in Vertebral catheter. Five-mm. balloon was inflated along SFA. Stent was placed at reentered site. Puncture sites were successfully compressed at proximal SFA and internally compressed by balloon at mid SFA.

Clinical time course and implication

PTA gained strong pulse. Stump of amputated big toe had good granulation.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-21] Making a puncture site via popliteal artery is useful for the patient with limited access site.

Hiroshi Mikamo, Shunsuke Todani, Takuro Ito, Shuji Sato, Takuo Iizuka (Toho university Sakura Medical Center)

Case overview

An 82-year-old gentleman with a history of severe claudication. Comorbidities included hypertension, smoking. He had undergone prior bilateral external iliac artery (EIA) and common iliac artery (CIA) stenting. He was found to have right common femoral artery (CFA)-mid popliteal artery (POP) disease. Right CFA lesion made it difficult to puncture. On the other, crossover approach from the contralateral femoral was difficult due to kissing stent in bilateral CIA. Left brachial was also difficult due to subclavian artery stenosis.

Procedure summary

6Fr Glide sheath was inserted into right POP in an ipsilateral retrogradely. 4Fr ST and CXI and Jupiter FC was passed to aorta. After the lesion in CFA-mid SFA was pre-dilated a Sterling6.0x150mm, a SUPERA6.0x150mm was deployed. It was so difficult to put stent in distal SFA-mid POP that the sheath was too close the lesion. As dilating right CFA enabled to puncture, it was used as an approach site with 6Fr Destination45cm. The distal right SFA to POP were pre-dilated with a SHIDEN HP4.0x150mm and stented with a SUPERA5.5x150mm. Finally, hemostasis of right POP was done with a SHIDEN HP4.0x150mm.

Clinical time course and implication

In cases there is no usual access site, making a puncture site from POP is one of the useful options.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-22] SUPERA stent implantation for CFA non-stenting zone

Yuya Nakagawa (Hakodate Medical Association Hospital)

What's known?

Zone2/Zone3 thoracic endovascular aortic repair (TEVAR) combined with ascending aorta replacement (AAR) might save the lives and improve aortic remodeling for acute type A aortic dissection (aTAAD)

What's new?

20 out of 244 aTAAD received AAR+Z2/Z3TEVAR in these 3+ years. 15 males and 5 females (63±14y/o) presented 45% pericardial effusion, 12% shock and 25% carotid compromise. The TEVAR indications included small descending aortic true lumen, penetrating atherosclerotic ulcers (PAU) and mal-perfusions. There are 2 preoperative CPRs, 4 intubations and none pericardiocentesis. 60% stents were antegradely deployed with 18 Zone3 and 2 Zone2 landing. Severe early complications were 60% including temporary hemodialysis and bleeding. 30% early mortality included 4 preoperative tamponad, 1 cardiac arrest, 1 innominate occlusion coming out 2 brain complications and 4 bleedings. Only post-op-1-day-blood-

transfusion contributes to death by multi-valiant regression analysis. The late complications in alive patients are 92.9%, including 6 residual arch dissection and 3 sinus of Valsalva dissection etc. The reintervention is 28.6% including Ia/Ib endoleaks, PAU and carotid stenosis. 50% follow-up has residual arch dissection and 28.6% has false lumen thrombosis (FLT) of descending aorta.

AAR+Z2/Z3TEVAR has only 50% chance of aortic arch FLT unproportionate to risks of increasing operation complexity, ischemic and hypothermic bypass time.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-23] A successful case of peripheral vascular stent graft placement after thrombectomy for a popliteal artery injury as a complication of total knee arthroplasty.

Satoru Sawada, Yuusuke Namba, Kei Yunoki, Toyohiro Endo, Masaki Tabuchi, Zyun Ida, Yuuki Ohga, Youzi Kubo, Mitsuaki Matsumoto, Takefumi Oka (Tsuyama chuo hospital)

Case overview

A female patient in her 70s who underwent total knee arthroplasty for right knee osteoarthritis had coldness in her right foot on the first postoperative day. Computed tomography revealed a contrast defect that suggested a thrombus in the right popliteal artery, although a metal artifact was found around her right knee.

Procedure summary

On the second postoperative day, thrombectomy was performed by a cardiovascular surgeon. The Fogarty catheter could not pass through the popliteal artery and the 0.014-in wire could not cross the lesion antegradely. Accordingly, we established a retrograde approach using a 0.014-in wire via the right dorsal artery. The retrograde 0.014-in wire could cross the lesion easily. Thereafter, the antegrade wire was replaced with a microcatheter using the pull-through technique. Intravascular ultrasonography revealed no perfect circle artery and a torn external elastic membrane. Hence, we considered that the popliteal artery occlusion was due to the perioperative injury of the popliteal artery. A 5.0/50-mm VIABAHN stent was implanted; thereby, optimal blood flow was obtained.

Clinical time course and implication

The right ankle-brachial index improved from 0.41 to 0.91, and the subjective symptoms improved after the procedure.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-1)

[MO-24] A bailout case via reverse BADFORM technique to retrieve SUPERA system having both elongated stent and the torn off tip

Keisuke Ueno (Yao Municipal Hospital)

Case overview

A case of 72-year-old female, had been suffered from claudication of Rutherford class III. We performed elective endovascular therapy for stenotic lesion with calcification of her left superficial femoral artery.

Procedure summary

Firstly, we approached via right femoral artery because of nodule calcification of left common femoral artery. Secondly, we set guiding catheter contralaterally through the stent strut of kissing stents of bilateral common

iliac arteries, and crossed the guidewire to the calcified lesion of distal superficial femoral artery. Thirdly, we performed balloon angioplasty as vessel preparation and tried to deploy SUPERA to the lesion. However, the stent was elongated remarkably and the tip was torn off at the bifurcation of terminal aorta. Then, we added the 4Fr system via right femoral artery and succeeded to retrieve both elongated stent and the tip by reverse BADFORM technique without any complications.

Clinical time course and implication

It is recognized that there are several complications in situation of deploying SUPERA, and here we present a case with successful bailout.

Presentation Awards

[L2-2] Presentation Awards

Moderators: Taketsugu Tsuchiya (Kanazawa Medical University Hospital) , Giancarlo Biamino (Cardiology, Cardiovascular Consulting, Italy)

Panelists: Taku Kato (Rakuwakai Otowa Hospital) , Keerati Hongsakul (Prince of Songkla University)

2020年2月21日(金) 10:30 ~ 12:00 Hall L-2 (Exhibition)

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-25] VIABAHN may be excreted: a report of two cases.

Nobutake Ito¹, Masanori Inoue¹, Masashi Tamura¹, Hideyuki Torikai¹, Seishi Nakatsuka¹, Hideo Kayama², Makiko Masuda³, Masahiro Jinkzaki¹ (1.Department of Diagnostic Radiology, Keio University School of Medicine, 2.Department of Radiology, International Goodwill Hospital, 3.Department of Radiology, International Goodwill Hospital)

Case overview

Stent graft placement has become one of the first-choice treatment for abdominal hemorrhage since mid-2017 when VIABAHN was officially approved for its use. The effectiveness and safety have been repeatedly described, however, migration is rarely reported. We present two such rare cases which migration occurred months after the placement for post-surgical hemorrhage due to pancreaticoduodenectomy.

Procedure summary

CT angiography for investigating the causation of post-surgical hemorrhage depicted a pseudoaneurysm in the hepatic artery in both cases. VIABAHN was placed into the hepatic artery subsequently in a standard manner and hemostasis was obtained. However, asymptomatic occlusion of the graft was pointed out on CT later on.

Clinical time course and implication

After a while, although the clinical course was uneventful, the migration of VIABAHN into the jejunal loop was noted. VIABAHN completely vanished in one case, but the patient did not notice the excretion of it. These cases demonstrated that the dramatic migration of VIABAHN placed in the hepatic artery may happen. From the affinity of the cases, graft thrombosis and pancreatic leak were suspected to play a role in the migration.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-26] A case report of endovascular coil embolization for regrowth of aortic arch aneurysm due to leakage from a synthetic graft

Jun Hashiba¹, Atsushi Saiga², Hideki Ueda³, Yoshihiro Kubota², Akira Akutsu², Shoma Yamauchi¹, Takeuchi Takashi², Takuro Horikoshi², Uno Takashi² (1.Department of Radiology, Numazu City Hospital, 2.Department of Radiology, Chiba University Hospital, 3.Department of Radiology, Chiba University Hospital)

Case overview

A 71 year-old male with severe emphysema and hypertension underwent aortic replacement surgery with a Dacron graft for a distal aortic arch aneurysm. Eight years later, there was a leak from the distal anastomotic site of the graft into the re-expanding aneurysmal sac. Although he was treated with thoracic endovascular repair (TEVAR) in zone 3, he experienced hoarseness just 1 month after. On follow-up CT scan, another leak was detected in zone 2 with the enlarging aneurysmal sac.

Procedure summary

Embolization was performed using coils, and the leakage was successfully disappeared.

Clinical time course and implication

Follow-up CT scans 1 month and 8 months after treatment showed no dilatation of the sac.

Late complications after surgical repair with synthetic grafts include pseudoaneurysm, graft rupture, and intrinsic graft failure, etc. Of these, non-anastomotic aneurysm formation is very rare (0.5-3.0%). Synthetic graft failures occur much more frequently in knitted Dacron grafts than in woven Dacron grafts or ePTFE grafts.

The primary treatment option for leakage from a synthetic graft is removal of the graft and re-implantation of a novel graft. TEVAR has been becoming a common approach to treat high risk patients. However, endovascular embolization could be an alternative option for patients at high risks of general anesthesia.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-27] A case of acute thoracic aortic occlusion

Hirooki Higami, Shinnosuke Nomura, Nobuya Higashitani, Kazuaki Kaitani (Japanese Red Cross Otsu hospital Department of cardiology)

Case overview

A 76-year-old man was admitted emergently due to cardiac pulmonary arrest. His deteriorated hemodynamic status was improved by basic life support. He was diagnosed congestive heart failure caused by afterload mismatch.

Nevertheless previous contrast-enhanced CT image showed thoracic aortic stenosis, CT image on arrival showed aortic occlusion.

It seemed that an acute thoracic aortic occlusion caused adverse afterload mismatch and cardiac arrest, therefore, emergent thoracic endovascular repair (TEVAR) was performed.

Procedure summary

The thoracic aortic total occlusion lesion was crossed by 0.014" wire, subsequently, intravascular ultrasound (IVUS) was performed and that showed atherosclerotic plaque or thrombus, not aortic dissection. However Zenith TX Alpha stent graft was deployed in descending thoracic aorta, the graft did not expand well. Thus, another Zenith TX Alpha was deployed and dilated using large size balloon.

However symmetric expansion of stent graft was not achieved, the blood pressure gradient between upper and lower half of the body had disappeared finally.

Clinical time course and implication

On postoperative day 3, heart failure was improved. The follow up CT image on day 7 showed more symmetric expansion of stent graft at descending thoracic aorta compared to immediately after TEVAR. On day 30, the patient was discharged.

In conclusion, TEVAR was effective for improving heart failure caused by acute thoracic aortic occlusion without dissection.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-28] Percutaneous puncture of angioplasty balloon for creating an access route for endovascular aortic aneurysm repair

Masahiro Inagaki, Shigeo Shigeo Ichihashi, Satoru Nagatomi, Shinichi Iwakoshi, Kimihiko Kichikawa (Dept of Radiology, Nara Medical University)

Case overview

The case was a man in his 70' s affected by a 60mm infrarenal AAA. All of the left EIA, common femoral artery (CFA) and SFA were totally occluded.

Procedure summary

He had a past history of undergoing endarterectomy of left CFA. Since a repeated endarterectomy or replacement of the CFA deemed extremely difficult, without any patent runoff vessel, we decided to perform EVAR using the occluded vessel just as a conduit for the delivery of the endograft, without revascularizing the vessel. A guidewire from right CFA access was advanced antegradely to occluded left CFA, followed by a delivery of an angioplasty balloon. A percutaneous puncture of the expanded balloon was done at left CFA under fluoroscopy, inserting the guidewire into the punctured balloon, finally establishing the through and through wire. Main body of the AFX 2 endograft was advanced from a patent right iliac artery, and a left limb of the endograft was landed on left common iliac artery.

Clinical time course and implication

EVAR was successfully performed for AAA with unilateral iliac access occlusion using the novel percutaneous balloon puncture technique.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-29] Revascularization of renal artery using ultra-low volume contrast

Naoto Murase¹, Kenji Suzuki¹, Naoki Fujimura² (1.Tokyo Saiseikai Central Hospital, Department of Cardiology, 2.Tokyo Saiseikai Central Hospital, Department of Vascular Surgery, 3.Tokyo Saiseikai Central Hospital, Department of Vascular Surgery)

Case overview

A nineties male was referred to our outpatient clinic because of worsening renal function. His creatinine level has increased to 3.5mg/dl from 1.6mg/dl in a month. Duplex and magnetic resonance angiography indicated bilateral severe renal artery stenosis.

Procedure summary

Revascularization of left renal artery was performed with 8ml contrast media. With using diluting contrast media and revised digital subtraction angiography, left renal artery was selected by Cruise wire. After 4mm balloon pre-dilatation, Express SD 4mm/19mm was deployed. Angiography revealed some thrombus in distal segment of renal artery, aspiration and 60, 000 units Urokinase were used to improve blood flow. Final angiography indicated recanalization of renal blood flow, and no complication occurred.

Clinical time course and implication

After revascularization, renal function improved to 2.2mg/dl.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-30] Laser Fenestration of Renal Arteries After Failed Infrarenal EVAR

Nathan Itoga, Jason Lee, Claire Watkins (Stanford University)

Case overview

Treatment of late type 1A endoleaks after infrarenal EVAR may be challenging as a higher seal zone into the

renal-visceral aorta may be required. The distance from the previous flow divider to the renal arteries may also preclude manufactured fenestrated stent grafts to be implanted. As an alternative to snorkel/ chimney grafts, we describe laser fenestration techniques to facilitate sealing into the supra-renal aorta.

Procedure summary

We first place bare metal stents into the renal arteries to mark the ostium. We then deploy the aortic graft which contains fenestrations to the SMA and celiac artery. With a steerable sheath we align the laser catheter into renal arteries in an orthogonal plane, laser through the graft using a 2mm device, and then advance a wire. We serially dilate the fenestration and use a 6mm balloon expandable covered stents and flare the aortic portion. Two iliac limbs were then deployed in a double barrel fashion to seal into the previous infrarenal graft (Figure).

Clinical time course and implication

The patient was discharged on post-operative day 1. At 1-month follow-up his renal artery stents were patent and had sac regression. We further describe laser fenestration for the left subclavian artery during TEVAR and SMA for TAAA repair in eight patients.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-31] Acute limb ischemia in a 12-year-old boy

Shinnosuke Nomura, Higami Hirooki, Kazuaki Kaitani, Masahira Hukuoka (Otsu Red Cross Hospital)

Case overview

A 12-year-old boy admitted emergently due to acute left leg paralysis while playing football.

Contrast-enhanced CT angiography (CTA) revealed an occlusion of the left common iliac artery (CIA) and a low CT index mass in the left atrium.

It seemed that embolization from the left atrium caused acute limb ischemia, therefore, emergent surgical embolectomy was planned.

Procedure summary

Surgical embolectomy was performed from left groin.

The arterial embolus could not be retrieved using Fogarty catheter, EN Snare® (Endovascular Snare System). Subsequently, ALN Vena Cava Filter removal kit was tried, however it failed. However, ALN Vena Cava Filter removal kit could move the arterial embolus to terminal aorta. Finally, the embolus was retrieved successfully from the right side using Fogarty catheter.

Clinical time course and implication

The retrieved mass was confirmed the myxoma, not a cancer, by histopathological diagnosis. Therefore, urgent resection surgery for the left atrial tumor was performed. The patient had improved smoothly, and discharged on postoperative day 12.

In conclusion, surgical embolectomy from contralateral side was effective for the myxoma embolism.

(2020年2月21日(金) 10:30 ~ 12:00 Hall L-2)

[MO-32] Embolization of ruptured aneurysm in internal iliac artery by direct needle puncture under ultrasound guidance

Saburo Kusumoto, Takahiro Muroya, Ryo Eto, Kaisi Otsuka, Koichiro Sonoda, Hiroki Shinboku, Shiro Hata (Sasebo City General Hospital)

Case overview

88-year-old man was admitted to our hospital for massive melena. Contrast-enhanced CT revealed a ruptured aneurysm in internal iliac artery (AIIAs), which was identified as the source of the bleeding into his rectum. Because of the high age, the patient was considered to be at high risk for open surgery.

Procedure summary

Then, we chose to carry out an embolization of the aneurysm and its efferent arteries by direct puncture of the aneurysmal sac using an antero-external abdominal approach under ultrasound guidance. To avoid the distal embolization by the reflux of embolic agent, we performed a balloon dilation in front of the ostium of the aneurysmal internal iliac artery. Embolization of AIIAs was successfully achieved after total amount of 5.5ml of thrombin injection.

Clinical time course and implication

At 2 days after treatment, there was rebleeding from the rectum. Contrast-enhanced CT showed the rebleeding at the ostium site of AIIAs. Embolization using NBCA was performed from antegrade access. After this procedure bleeding was controlled successfully and intestinal resection and construction of artificial anus were performed. Our case shows that the embolization of AIIAs using direct needle puncture is fast and minimally invasive procedure, even if it contains the risk of complications in particular of intestinal perforations.

Presentation Awards

[L1-3] Presentation Awards

Moderators: Yoshiaki Yokoi (Kishiwada Tokushukai Hospital) , Lawrence Garcia (Cardiology, Steward St. Elizabeth's Medical Center, US)

Panelists: Kiyohito Arai (Saiseikai Kurihayashi Hospital) , Min-Ku Chon (Cardiology, Pusan National University Yangsan Hospital, Korea)

2020年2月21日(金) 13:40 ~ 15:10 Hall L-1 (Exhibition)

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-33] Technique for internal iliac artery preservation in iliac aneurysm with narrow iliac bifurcation

Kwong Shun Chan, Kin Yan Lee (Department of Surgery, Queen Elizabeth Hospital, Hong Kong)

What's known?

Preservation of internal iliac artery is important in treating iliac aneurysm, in order to prevent pelvic ischemia. The instruction for use from Cook Medical iliac bifurcation device (IBD) requires a minimum diameter of 16mm over iliac bifurcation. However, cases of iliac aneurysm with narrow iliac bifurcation is not uncommonly seen.

What's new?

We reported a case series (n=5) of patients having aortoiliac aneurysm with narrow iliac bifurcation, who received endovascular treatment using the Cook Medical IBD. A pre-wiring technique was used to pre-cannulate the internal iliac artery (IIA) before deployment of the IBD, to prevent complete occlusion of the IIA orifice by the IBD. Clinical success of preservation of IIA was achieved in all cases, with follow-up imaging confirmed the patency of the IBD and IIA. Thus, preservation of IIA in iliac aneurysm with narrow iliac bifurcation is still possible.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-34] One-year prognosis of femoropopliteal disease after heparin-bonded ePTFE-covered stent

Masakazu Tsutsumi, Keisuke Hirano, Shigemitsu Shirai, Kenji Makino, Yohsuke Honda, Yasunari Sakamoto, Shinsuke Mori, Norihiro Kobayashi, Motoharu Araki, Masahiro Yamawaki, Yoshiaki Ito (Saiseikai Yokohama-city Eastern Hospital)

What's known?

Background : Clinical outcomes of VIABAHN heparin-bonded ePTFE-covered stent for Japanese patient is uncertain.

Purpose : To investigate the one-year clinical outcomes of VIABAHN implantation for femoropopliteal (FP) disease in our center.

What's new?

Methods : A single center, retrospective study. Between June 2017 and October 2018, 27 VIABAHN implantation were performed. Among them, 7 procedures performed as bailout of hemorrhage were excluded. Consecutive 20 procedures for treatment of FP disease were enrolled in this study. One-year clinical outcomes as primary patency, incidence of acute limb ischemia (ALI), major adverse limb event

(MALE), all-cause death and ALI related death were evaluated. Patency was assessed by duplex ultrasound every 3 months.

Results : Half of them were malignant restenotic lesions which repeat revascularization more than twice. 90%(n=18) were chronic total occlusions. 65%(n=13) were TASC II type D lesions. Half were chronic limb-threatening ischemia. Mean number of VIABAHN used in a procedure was 1.6 ± 0.6 . Total VIABAHN length was 25.5 ± 12.9 cm. Minimum VIABAHN diameter used in a procedure was 5.8 ± 0.7 mm. One patient dropped-out from follow-up. The other 19 patients received one-year follow-up. One-year primary patency was 84%. Incidence of ALI was 16%(n=3). Incidence of MALE was 16%. (3 ALI patients received major amputation and surgical revascularization) All-cause mortality was 26%. ALI related mortality was 11%.

Conclusion : Despite severe lesion background, primary patency of VIABAHN is satisfyingly high. However, incidence of ALI and ALI related death are also high.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-35] Clinical outcomes of contemporary devices for femoropopliteal occlusive disease

Ryotaro Tani, Yoshinori Tsubakimoto, Tomotaka Fujimoto, Ryoetsu Yamanaka, Takeshi Kasahara, Daisuke Irie, Koji Isodono, Tomohiko Sakatani, Akiko Matsuo, Keiji Inoue, Hiroshi Fujita (Japanese Red Cross Kyoto Daini Hospital)

What's known?

Recently, various devices including drug-coated balloon (DCB) have become available for femoropopliteal intervention in Japan. However, actual clinical performance of each device remains unclear. Even the latest clinical guidelines do not give a definite view on which device to choose. The purpose of this study is to compare the clinical performance of contemporary femoropopliteal devices.

What's new?

This was a single-center retrospective observational study. From January 2017 to July 2018, consecutive 65 patients with de novo 97 lesions underwent endovascular treatment were enrolled. Outcomes were primary patency (defined as peak systolic velocity ratio > 2.4 by duplex ultrasound) at 12 month after the initial treatment. Mean age was 76.1 ± 7.6 year old and proportion of female was 36.1%. Mean lesion length was 131.05 ± 83.07 mm and 26 lesions (24.7%) were chronic total occlusion. The Kaplan-Meier (KM) analysis showed overall primary patency rate and freedom from clinically driven target lesion revascularization rate were 59.1% and 78.8%, respectively. Stratified according to each device, primary patency rates of plain old balloon angioplasty (POBA), bare-nitinol stent (BNS), drug-coated stent (DCS) and DCB were 50.8%, 60.3%, 56.5% and 68.7%, respectively ($p=0.86$). In our study, despite DCB tended to have better clinical performance than the other devices, there was no statistically significant difference in primary patency between investigated devices. Further larger scale investigation is needed to elucidate this issue.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-36] 18F-FDG uptake as a predictive factor for progressive aortic enlargement in aortic dissection

Takatoshi Higashigawa¹, Noriyuki Kato¹, Yasutaka Ichikawa¹, Ken Nakajima², Takafumi Ouchi¹, Shuji Chino², Koji Hirano³, Toshiya Tokui³, Hajime Sakuma¹ (1.Department of Radiology, Mie University Hospital, 2.Department of Radiology, Ise Red Cross Hospital, 3.Department of Radiology, Ise Red Cross Hospital)

What's known?

Objectives: Progressive aortic enlargement is a critical adverse event in patients with medically treated aortic dissection (AD). However, no reliable predictor of the progressive aortic enlargement has been established. The purpose of this study was to evaluate the value of ^{18}F -FDG PET/CT for the prediction of progressive aortic enlargement in patients with medically treated AD.

What's new?

Methods: Sixteen patients with AD were prospectively enrolled. Target-to-background ratio (TBR) was measured as the maximum standardized uptake value (SUV) in the dissected aortic wall divided by blood pool SUV. The relation between TBR and occurrence of progressive aortic enlargement in AD was evaluated. Results: Progressive aortic enlargement was observed in 4 patients. The TBR measured in the 4 patients who had progressive aortic enlargement was significantly higher than those in the remaining 12 patients without progressive aortic enlargement ($P = 0.025$). With a threshold of 2.34, the TBR showed the sensitivity, specificity, and positive and negative predictive value of 75%, 92%, 75%, and 92%, respectively, for the prediction of progressive aortic enlargement.

Conclusions: Higher ^{18}F -FDG uptake in the dissected aortic wall as determined by TBR is associated with increased risk of progressive aortic enlargement in medically treated patients with AD.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-37] Statins play through lipid-lowering or anti-inflammation in PAD patients? – Subanalysis from multicenter registry –

Kentaro Jujo¹, Daisuke Ueshima², Yo Fujimoto³, Kensuke Shimazaki¹, Tomofumi Tanaka⁴, Teppei Murata⁵, Toru Miyazaki⁶, Masaaki Matsumoto⁷, Hideo Tokuyama⁸, Tsukasa Shimura⁹, Higashitani Michiaki¹⁰

(1.Nishiarai Heart Center, 2.Kameda Medical Center, 3.Kameda Medical Center, 4.Sakakibara Heart Institute, 5.Tokyo Metropolitan Geriatric Medical Center, 6.Yokohama Central Hospital, 7.Yokohama Central Hospital, 8.Kawaguchi Cardiovascular and Respiratory Hospital, 9.Yokohama City Minato Red Cross Hospital, 10.Tokyo Medical University Ibaraki Medical Center)

What's known?

Recent trials demonstrated favorable effects of statins on the clinical prognosis, partly through anti-inflammatory properties, in patients with coronary artery disease. However, this favorable effect has not been fully verified in patients with peripheral arterial disease (PAD). We hypothesized that statins exert different prognostic effects depending on the degrees of inflammation at the time of endovascular therapy (EVT).

What's new?

This study is a subanalysis from the Toma-Code Registry that is a Japanese prospective cohort of 2,321 consecutive patients with PAD treated by endovascular therapy in hospitals from 2014 to 2016. After the exclusion of patients without information of C-reactive protein (CRP) at the time of index EVT, 2,039 patients including 1,039 statin users and 1,000 statin non-users were ultimately analyzed. The patient enrolled were divided into 4 categories depending on CRP level at the time of EVT; Low-CRP (<0.1 mg/dL), Intermediate-low-CRP (0.1-0.3 mg/dL), Intermediate-High-CRP (0.3-1.0 mg/dL), and High-CRP (>1.0 mg/dL). A composite of death, stroke, myocardial infarction, and major amputation as the primary endpoint of this study was compared between statin users and non-users in each CRP category. The composite endpoint occurred in 255 patients during the observation period. Overall, statin users had a significantly lower event rate than non-users (Log-rank test: $P < 0.001$). However, there were no significant difference in the event rates between statin users and non-users in the Low-, and Intermediate-Low-CRP categories. Only in the Intermediate-High- and the High-CRP categories, statin users showed a significantly lower event rates than non-users ($P = 0.02$).

and $P=0.008$, respectively, Figures). Additionally, multivariate Cox regression analysis in the High-CRP group revealed that statin use was independently associated with the primary endpoint (adjusted hazard ratio: 0.67 [95% confidence interval: 0.45-0.99]), even after the adjustment of covariants. Statins may exert a favorable prognostic effect in PAD patients with highly elevated CRP, but not in those with low to moderate CRP level.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-38] Pure endovascular aortic repair for Type A intramural hematoma of aorta

Mingli Li², Yi-Chun Lin¹, Chia-Ying Lin², Anna E. Yu¹, Chih-Hsiang Hsu², Ching-Feng Wu², Ping-Chun Li², Hui-Han Lin² (1.China Medical University, Department of Medicine, 2.China Medical University Hospital, Cardiovascular Surgery, 3.China Medical University Hospital, Cardiovascular Surgery)

What's known?

Conservative treatment for type A intramural hematoma (AIMH) carries a high mortality up to 50% in 2 weeks. Pure endovascular aortic repair (EnVAR) might save lives in cases with detectable intimal disruptions (IDs) by preoperative CT or aortogram.

What's new?

23 out of 91 AIMH, aged 61.8 ± 13.6 , received EnVAR instead of open repair from Jan. 2015 to May 2019 with 30.4% IMH thickness $< 10\text{mm}$ and 43.5% ascending aortic diameter $\geq 45\text{mm}$. There were 2 penetrating atherosclerotic ulcers (PAUs) in ascending aorta, 7 intimal disruptions (IDs) in other segments and 7 aortic dissections beyond aortic arch. 3 preoperative shock and 1 endotracheal intubation had made 3 early- and 1 late-mortality with mean discharge-days 15.9. 2 of deaths were suspected aorta-related. Early complications were 69.6%, including 2 progressive paraplegia, 8 acute kidney injuries, 2 brain infarctions etc. Late complications were 30.4%, including iliac stent occlusion, stent edge disruptions etc. Re-intervention rate is 34.8%. 75% has false lumen thrombosis beyond stent graft, 40% follow-up reveals healing of native aorta and 10% new PAUs/IDs.

EnVAR avoids aortic death of 82.6% patients with AIMH by obliterating detectable IDs in thoracic aorta despite of high complications and reinterventions. The remodeling of aorta is fair enough.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-39] The prognosis after endovascular revascularization among hemodialysis patients

Munehiro Iiya¹, Hishikari Keiichi¹, Murai Tadashi¹, Hikita Hiroyuki¹, Takahashi Atsushi¹, Sasano Tetsuro² (1.Yokosuka Kyosai Hospital, 2.Tokyo medical and dental university, 3.Tokyo medical and dental university)

What's known?

Patients with hemodialysis have severe arteriosclerosis and underwent poor prognosis compared with patients without, although the characteristics and prognosis of these patients remain unclear.

What's new?

The present study enrolled consecutive 900 patients who underwent endovascular therapy (73 ± 8 years, 630

male) in Yokosuka Kyosai Hospital. The accumulate rate of MALE (defined as a composite of target lesion revascularization, non-target lesion revascularization, amputation, and all-cause death) for three years were evaluated. Consequently, hemodialysis patients had more frequent MALE compared with non-hemodialysis patients.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-1)

[MO-40] The impact of atrial fibrillation on one-year mortality in patients with severe peripheral artery diseases

Liu Cheng-Wei¹, Su Min-I² (1.Tri-service General Hospital, Songshan branch, 2.Taitung Mackay Memorial Hospital, 3.Taitung Mackay Memorial Hospital)

What's known?

Atrial fibrillation (Afib) was associated with the incidence of peripheral artery disease (PAD), but the effect of Afib on prognosis in patients with severe PAD remains unclear.

What's new?

The study consisted of 225 patients with age 74 ± 11 years, the stage of Rutherford classification 4.6 ± 0.8 , 53.8% male, and 13.3% presented with acute limb ischemia. The patients with Afib vs. without Afib had greater ratios of all-cause mortality at one year (42.9% vs. 20.8%, $P=0.016$). Afib was independently associated with all-cause mortality at one year (adjusted HR:2.507, 95% CI:1.221-5.148, $P=0.012$) after we adjusted for possible confounders. Other predictors associated with all-cause mortality included the presence of acute limb ischemia (adjusted HR:4.662, 95% CI: 2.336-9.304, $P<0.001$), Rutherford classification (adjusted HR:2.159, 95% CI: 1.358-3.433, $P=0.001$), Neutrophil-lymphocyte ratio (adjusted HR:1.014, 95% CI: 1.040-1.251, $P=0.005$), creatinine (adjusted HR:1.140, 95% CI: 1.040-1.251, $P=0.015$). We concluded that Afib was significantly associated with an increased risk of all-cause mortality at one year in the patients with severe PAD, and future studies may investigate whether the use of oral anti-coagulants benefits to these patients.

Presentation Awards

[L2-3] Presentation Awards

Moderators: Kazushi Urasawa (Tokeidai Memorial Hospital) , Po-Jen Ko (Vascular Surgery, Chang Gung Memorial Hospital, Taiwan)

Panelists: Kei Ichihashi (Ichinomiyanishi Hospital) , Chi-Yen Wang (Cardiology, Taichung Veterans General Hospital, Taiwan)

2020年2月21日(金) 13:40 ~ 15:10 Hall L-2 (Exhibition)

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-41] Clinical impact of fractional flow reserve for femoropopliteal lesion after balloon angioplasty

Norihiro Kobayashi, Keisuke Hirano, Masahiro Yamawaki, Araki Motoharu, Yasunari Sakamoto, Shinsuke Mori, Masakazu Tsutsumi, Yohsuke Honda, Kenji Makino, Shigemitsu Shirai, Yoshiaki Ito (Saiseikai Yokohama-city Eastern Hospital)

What's known?

In coronary artery disease, fractional flow reserve (FFR) is useful tool to evaluate severity of ischemia. On the other hand, clinical impact of FFR for femoropopliteal (FP) lesion remains unclear.

What's new?

We measured FFR after balloon angioplasty for FP lesion and evaluated its predictive ability of future restenosis. In addition, we evaluated intravascular ultrasound (IVUS) findings which related to decline of FFR value. A total of 34 FP lesions underwent FFR measurement after balloon angioplasty. At 1 year follow-up, 13 FP lesions (38.2%) had restenosis. FFR measurement after balloon angioplasty was significantly lower in restenosis lesion compared to non-restenosis lesion (0.79 ± 0.09 in restenosis lesion vs. 0.93 ± 0.05 in non-restenosis lesion, $P < 0.001$). ROC curve analysis revealed that area under the curve was 0.91 (95%CI 0.79-1.0, $P < 0.001$) and good cut-off point of FFR measurement for predicting restenosis was 0.87 (sensitivity 92.3% and specificity 78.0%). In lesions with low FFR (> 0.87), minimum lumen area assessed by IVUS was significantly larger compared to lesions with low FFR ($12.5 \pm 4.4 \text{mm}^2$ vs. 10.7 ± 4.7 , $P = 0.038$). FFR value after balloon angioplasty for FP lesions was useful to predict future restenosis.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-42] Comparison of echo-guide endovascular treatment (EVT) vs angio-guide EVT for femoropopliteal artery occlusive disease

Takahiro Tokuda¹, Yasuhiro Oba¹, Ryoji Koshida², Yoriyasu Suzuki¹, Ai Kagase¹, Hiroaki Matsuda¹, Yusuke Ochiumi¹, Akira Murata¹, Tatsuya Ito¹ (1.Nagoya Heart Center, 2.Toyohashi Heart Center, 3.Toyohashi Heart Center)

What's known?

Objective: The aim of this study is to compare the efficacy and its results of echo-guide endovascular treatment (EVT) and angio-guide EVT for femoropopliteal occlusive disease.

What's new?

Methods: A retrospective analysis was performed using the data collected from lesions that underwent EVT for the femoropopliteal artery occlusive disease between January 2010 and April 2018.

A total of consecutive 181 de novo lesions were analyzed in this study and divided depending on the way of recanalization. The prognostic value was analyzed based on number of guidewires, wire cross time, distal

puncture rate, radiation exposure, the amount of contrast media, primary patency, and clinically driven-target lesion revascularization (CD-TLR) at 1 year.

Results: Angio-guide EVT was performed for 159 lesions and echo-guide EVT was performed for 22 lesions. There were no significant differences between the two groups in terms of patient and lesion characteristics. The number of guidewires, distal puncture rate, radiation exposure, and the amount of contrast media were significantly lower in the echo-guide group (2.9 vs 4.1, $p < 0.03$, 64.8% vs 4.6%, $p < 0.01$, 666 mGy vs 239 mGy, $p = 0.03$, 75 ml vs 35 ml, $p < 0.01$), but there were no significant differences between the two groups in terms of wire cross time, primary patency, and CD-TLR.

Conclusions: The echo-guide EVT for femoropopliteal occlusive disease significantly reduced number of guidewires, the rate of distal puncture, radiation exposure and the amount of contrast media.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-43] Drug-coated balloon vs stepwise vs conventional balloon angioplasty for femoropopliteal peripheral artery disease

Hirokazu Konishi¹, Ryoji Koshida¹, Wataru Takeuchi², Maoto Habara¹, Kenya Nasu¹, Yoshihisa Kinoshita¹, Etsuo Tsuchikane¹, Mitsuyasu Terashima¹, Tetsuo Matsubara¹, Takahiko Suzuki¹ (1.Toyohashi Heart Center, 2.Iida Hospital, 3.Iida Hospital)

What's known?

Stent-less Percutaneous transluminal angioplasty (PTA) using a drug-coated balloon (DCB) is a novel strategy, and several trials have supported the efficacy of DCB. The optimal plain old balloon angioplasty (POBA) before DCB would be required in this strategy. We design the stepwise dilatation method using two different size balloons. It was uncertain how we should do lesion-preparation before DCB. Therefore, patients with femoropopliteal lesion treated by conventional POBA, stepwise POBA and stepwise POBA+DCB were analyzed in this study.

What's new?

The this retrospective singlecenter study compared the acute result and the one-year outcome between conventional POBA, stepwise POBA and stepwise POBA + DCB. The rate of dissection above grade C was significantly lower in stepwise POBA (21%) compared with conventional POBA (37%) ($P < 0.01$). The rate of restenosis (one year) was significantly lower in stepwise POBA + DCB group (16%) compared with other 2 groups (39% and 42%) ($P < 0.01$). Multivariable analysis selected stepwise POBA + DCB as an independent factor of preventing restenosis rate. Consequently, Stepwise POBA and DCB could be a feasible method in stent-less PTA.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-44] Outcomes of Endovascular Treatment for Patients with Scleroderma

Masahiro Yamagami, Fukunaga Masashi, Kunihiko Nishian, Nakata Tuyoshi, Kawasaki Daizo (Cardiovascular Division Morinomiya Hospital)

What's known?

Critical limb ischemia (CLI) is unfortunately form of peripheral arterial disease (PAD). Some un-healing ulcers have scleroderma (SSc). SSc had poor prognosis limb outcomes. However the outcomes of endovascular

treatment (EVT) were not well known.

What's new?

We investigate the clinical outcomes of EVT for patients with scleroderma. From February 2014 to July 2018, 20 limbs in 14 SSc patients who underwent EVT were enrolled in this analysis. EVTs were success in all patients. Patients had tissue loss area on their foot and they were treated by expert plastic surgeons. We evaluated the wound healing rate, amputation free survival at 1-year and recurrence rate of wound after achieving complete wound healing. Mean follow up period was 546 days. During follow up period one patient was died. Complete wound healing rate was 61.1%, amputation free survival rate at 1-year was 77.8%. Recurrence rate of wound after achieving complete wound healing was 63.6%. In recurrence wound, same position rate was 85.7%. Amputation free survival at 1-year was as well as another CLI patients. The wound healing rate and recurrence rate of wound after achieving complete wound healing were very worse in CLI patients with SSc. More effective treatment might be needed on this field.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-45] Long time (10-minutes) balloon inflation get more initial gain before using drug-coated balloons

Yutaka Dannoura, Riho Suzuki, Masahiro Toba, Daisuke Murai, Kyoko Asakawa, Naoya Asakawa, Sanae Hamaguchi, Takao Makino, Naoshi Yokoshiki (Sapporo City General Hospital)

What's known?

Appropriate balloon inflation time before using drug-coated balloon (DCB) have not been unclear. We investigate if balloon angioplasty with a long inflation time (10-minutes) can get more initial gain and prevent dissection after using DCB in femoropopliteal lesions.

What's new?

This study was a single-center, cohort study. From July 2018 to June 2019, we had used 43 IN.PACT DCB for femoropopliteal lesions de novo lesions. There were 36 cases which had intra-vascular ultrasound (IVUS) findings, and there were 30 cases which is used same size balloon before using DCB. These 30 cases were classified into 2-minutes pre-dilatation group (n=8), staged pre-dilatation (2→10min) group (n=7), and 10-minutes pre-dilatation group (n=15). We measured minimum lumen area (MLA) by IVUS, and analyzed acute gain after pre-dilatation and post-DCB dilatation.

10-minutes pre-dilatation group got significantly more acute gain than 2-minutes group after using DCB ($8.6 \pm 4.4 \text{ mm}^2$ vs. $3.1 \pm 3.1 \text{ mm}^2$, $p=0.004$). In staged pre-dilatation group, significantly more acute gain got after 10-minutes ballooning than after 2-minutes ballooning ($4.8 \pm 1.9 \text{ mm}^2$ vs. $1.6 \pm 1.4 \text{ mm}^2$, $p=0.006$). Severe dissection tended to occur less frequently in 10-minutes group than 2-minutes groups.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-46] Factor analysis of restenosis after EVT for PACCS grade 4 severe calcified femoral popliteal artery legions

Hidenobu Seo, Amane Kozuki, Yoichi Kijima, Ryoji Nagoshi, Ryudo Fujiwara, Hiroyuki Shibata, Atsusi Suzuki, Humitaka Soga, Eri Ota, Syokan Kyo, Junya Shite (Osaka Saiseikai Nakatsu Hospital)

What's known?

【 Background】 The poor patency and prognosis of severe calcified lesion has been reported, however, the factor of restenosis in those lesions are unknown.

What's new?

【 Methods】 We investigated the de novo PACCS grade 4 femoropopliteal artery lesions underwent successful EVT from 2012 to 2018. In addition to patient, lesion, and procedure characteristics, IVUS images are analyzed. The primary end point was 1-year primary patency.

【 Results】 Among 698 de novo FP lesion underwent successful EVT during study period, 79lesion (11.4%) were PACCS grade 4. 48 lesions completed 1-year duplex ultrasound follow-up enrolled in the present study. The average lesion length was 117 mm, 37.7% was CTO. The 1-year primary patency rate was 43%, occlusion rate was 9.4%, and target lesion revascularization rate was 43%. Comparison of parameters between restenosis and non-restenosis group are shown in table.

Multivariate analysis was performed and revealed that CLI (HR 0.16, p=0.006) and CTO (HR 0.22, p=0.03) were the independent factors of 1 year loss of patency.

【 Conclusions】 CLI and CTO were the factors of loss of patency after EVT for PACCS grade 4 severe femoropopliteal artery lesions. Neither pre nor post IVUS findings predicted patency at present study.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-47] Drug-Coated Balloon vs. Stent for Superficial Femoral Artery Chronic Total Occlusion Lesion

Takahide Nakano, Yoshiaki Itoh, Keisuke Hirano, Masahiro Yamawaki, Motoharu Araki, Norihiro Kobayashi, Yasunari Sakamoto, Shinsuke Mouri, Masakazu Tsutsumi, Yohsuke Honda, Kenji Makino (Department of Cardiology, Saiseikai Yokohama city Eastern Hospital)

What's known?

For Superficial Femoral Artery (SFA) chronic total occlusion (CTO), it is uncertain whether DCB or Stent is better.

What's new?

Methods: This study was a single center retrospective study. From April 2018 to April 2019, 39 patients with SFA CTO lesion were included. 18 patients received Endovascular Treatment (EVT) with a DCB and 21 patients received EVT with a Stent. We assessed clinical outcome for 6 months. Evaluation items the rate of target lesion revascularization (TLR) and the rate of major adverse event (MAE), defined as all-cause death, clinically driven target vessel revascularization, major target limb amputation and thrombosis. Results: The rate of TLR at 6 months was 11.1% (2 of 18) in the DCB group and 14.3% (2 of 14) in the Stent group (P=0.788). The rate of MAE was 16.7% (3 of 18) in the DCB group and 14.3% (2 of 14) in the Stent group (P=0.854). Conclusion: At 6 months of follow-up, EVT with a DCB for SFA CTO lesion is associated with equally TLR rate and a clinical outcome compared with Stent without an apparent difference in safety.

(2020年2月21日(金) 13:40 ~ 15:10 Hall L-2)

[MO-48] Five-year Outcomes of Self-Expanding Stents for TASC II D superficial femoral artery disease.

Yusuke Setonaga, Kenji Makino, Yosuke Honda, Masakazu Tsutsumi, Shinsuke Mori, Yasunari Sakamoto, Norihiro Kobayashi, Motoharu Araki, Yamawaki Masahiro, Keisuke Hirano, Yoshiaki Ito (Saiseikai Yokohama city Eastern Hospital)

What's known?

Endovascular therapy for TASC II D superficial femoral artery is not recommended in Japanese Circulation Society Guideline. We investigated long-term results.

What's new?

Method: This study was a retrospective, single-center clinical study. Between 2007 to 2013, 213 lesions in 84 patients were stented superficial femoral artery in our facility. Among them, 46 lesions in 38 patients were able to follow up for 5 years. The primary outcome is clinical-driven target lesion revascularization (CD-TLR).

Result: The TLR rate at 5 years was 52% (24/46). TLR group tended to be older than non TLR group (TLR group 74 ± 2 years, non TLR group 67 ± 2 years, $p=0.07$). There was a tendency that the TLR group had longer total stent length (247 ± 18 mm vs 198 ± 18 mm, $p=0.07$). In the other items, there were no obvious differences of patients and lesion characteristics between the two groups. Conclusion: Self-Expanding Stents for TASC II D superficial femoral artery disease have poor long-term results. We must examine therapeutic methods more carefully considering patients and lesion characteristics.

Presentation Awards

[L1-4] Presentation Awards

Moderators: Hideaki Obara (Keio University School of Medicine) , Jimmy Wei-Hwa, Tan(Vascular Surgery, An-Nan Hospital, Taiwan)

Panelists: Akinori Sumiyoshi (Sakurabashi Watanabe Hospital) , Jiang, Xiongjing (Vascular Surgery, Beijing Fuwai Hospital, China)

2020年2月21日(金) 15:40 ~ 17:10 Hall L-1 (Exhibition)

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-49] Sarcopenia aneurysm scoring system predicts early and midterm mortality after endovascular repair for abdominal aortic aneurysm: A retrospective cohort study

Eisaku Ito¹, Takao Ohki², Naoki Toya¹, Hikaru Nakagawa¹, Takeyuki Misawa³ (1.Department of Vascular Surgery, The Jikei University Kashiwa Hospital, 2.Department of Vascular Surgery, The Jikei University School of Medicine, 3.Department of Vascular Surgery, The Jikei University School of Medicine)

What's known?

There are some prognostic scoring systems after endovascular aneurysm repair (EVAR) for abdominal aortic aneurysm (AAA). Sarcopenia is associated with various pathologies and the psoas muscle index (PMI) is known as an alternative predictor for sarcopenia, however a prognostic predictive scoring system after EVAR including the factors associated with sarcopenia has never been reported Herein, we developed new scoring system with PMI and preoperative patient characteristics and morphological features of AAA for predicting prognosis after elective EVAR.

What's new?

This retrospective cohort study analyzed preoperative sarcopenia and life expectancy after elective EVAR for AAA using bifurcated graft. Of 268 patients with EVAR, 81 patients (30.2%) died within 8 years. We created the SAS system as the sum of the following factors: elderly (75 years), large aneurysm (65 mm), low eGFR (30 mL/min/1.73 m²), and low PMI (40th percentile). The SAS was the most sensitive scoring system compared to the other systems. This study suggests that our SAS system showed better performance for predicting life expectancy after elective EVAR than the other existing systems.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-50] Midterm results of endovascular aneurysm repair using aneurysmal common iliac artery as landing zone

Tsunehiro Shintani¹, Mitsuoka Hiroshi², Hasegawa Yuto³, Hayashi Masanori¹, Natsume Kayoko¹, Ookura Kazuhiro³ (1.Department of Vascular Surgery, Shizuoka Red Cross Hospital, 2.Department of Cardiovascular Surgery, Shizuoka Hospital, 3.Department of Cardiovascular Surgery, Shizuoka Hospital)

What's known?

Endovascular repair of aortic aneurysm (EVAR) in patients with concomitant aneurysm of the common iliac artery (CIA) presents technical challenges and is associated with a relatively high risk of complications. However, despite several studies on the subject, much remains unknown about the natural history of

aneurysmal CIA used as landing zone in EVAR. The aim of this study was to evaluate midterm outcomes of this procedure and to assess the risk factors for complications in patients with aneurysmal CIA.

What's new?

This retrospective study included 144 patients (235 CIA limbs) who underwent EVAR with CIA landing zone between 2007 and 2015 and who had at least 3 years' follow-up with imaging. Among the included CIA, 165 were normal and 70 were aneurysmal, defined as maximum diameter 18 mm. Patients with aneurysmal CIA had a significantly higher rate of CIA-associated complications (CIA dilatation >5 mm or type Ib endoleak) than those with normal CIA. Subanalysis showed that incomplete aneurysm sealing was a significant risk factor for these complications in patients with aneurysmal CIA.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-51] Is it possible to reverse spinal cord ischemia via thoracic endovascular aortic repair for acute type B aortic intramural hematoma complicated with paraparesis?

Mengxia Su¹, Mingli Li², Ching-Feng Wu², Ping-Chun Li², Hui-Han Lin² (1.China Medical University, Department of Medicine, 2.China Medical University Hospital, Cardiovascular Surgery, 3.China Medical University Hospital, Cardiovascular Surgery)

Case overview

A 49-year-old male experienced sudden onset of chest distress, epigastralgia, diaphoresis, and bilateral leg weakness at midnight. Computed tomography (CT) showed acute type B intramural hematoma with focal intimal disruption (FID) at distal thoracic aorta (DTA).

Procedure summary

Thoracic endovascular aortic repair (TEVAR) with two aortic stent grafts (ASG) landing from Zone 1 to T8 with parallel grafts to left carotid and subclavian arteries. The wide base FID was left uncovered to prevent blockade of the intercostal arteries (ICA) blood flow. However, rapidly developed lower limb paraplegia and exacerbated epigastralgia were noted post-op 2 hours but only anti-impulse medicine prescribed. Post-op CT showed 2 intramural blood pools and persistent FID at DTA distal to previous ASG. Both ASG and LSA reverse chimney were extended to cover lesions at DTA with lumbar drain on post-operative day (POD) 4. MRI later confirmed spinal cord swelling at T6-L1. He was discharged on POD 51 with remaining paralyzed legs till now.

Clinical time course and implication

Recruitment of collateral circulation and rapid initiation of spinal cord protection protocols should be the priority in such case. 1st TEVAR might open true lumen & save kidney but failed to re-perfuse disrupted or thrombosed ICAs 2nd TEVAR jeopardized collaterals and made the recovery irremediable.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-52] The aortic remodeling after ascending aorta replacement and Zone 2/Zone 3 thoracic endovascular repair for Acute Type A

Aortic Dissection

Chia-Ying Lin³, Mingli Li², Yi-Chun Lin¹, Anna E. Yu¹, Chih-Hsiang Hsu², Ching-Feng Wu², Ping-Chun Li², Hui-Han Lin² (1.China Medical University, Department of Medicine, 2.China Medical University Hospital, Cardiovascular Surgery, 3.China Medical University Hospital, Cardiovascular Surgery)

What's known?

Zone2/Zone3 thoracic endovascular aortic repair (TEVAR) combined with ascending aorta replacement (AAR) might save the lives and improve aortic remodeling for acute type A aortic dissection (aTAAD)

What's new?

20 out of 244 aTAAD received AAR+Z2/Z3TEVAR in these 3+ years. 15 males and 5 females (63±14y/o) presented 45% pericardial effusion, 12% shock and 25% carotid compromise. The TEVAR indications included small descending aortic true lumen, penetrating atherosclerotic ulcers (PAU) and mal-perfusions. There are 2 preoperative CPRs, 4 intubations and none pericardiocentesis. 60% stents were antegradely deployed with 18 Zone3 and 2 Zone2 landing. Severe early complications were 60% including temporary hemodialysis and bleeding. 30% early mortality included 4 preoperative tamponad, 1 cardiac arrest, 1 innominate occlusion coming out 2 brain complications and 4 bleedings. Only post-op-1-day-blood-transfusion contributes to death by multi-valiant regression analysis. The late complications in alive patients are 92.9%, including 6 residual arch dissection and 3 sinus of Valsalva dissection etc. The reintervention is 28.6% including Ia/Ib endoleaks, PAU and carotid stenosis. 50% follow-up has residual arch dissection and 28.6% has false lumen thrombosis (FLT) of descending aorta.

AAR+Z2/Z3TEVAR has only 50% chance of aortic arch FLT unproportionate to risks of increasing operation complexity, ischemic and hypothermic bypass time.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-53] Modified type II hybrid arch replacement without circulatory arrest for acute type A aortic dissection

Wen-Cheng Yang², Mingli Li², Yi-Chun Lin¹, Chia-Ying Lin², Ping-Chun Li², Hui-Han Lin² (1.China Medical University, Department of Medicine, 2.China Medical University Hospital, Cardiovascular Surgery, 3.China Medical University Hospital, Cardiovascular Surgery)

What's known?

Type II hybrid arch replacement (2HAR) has been managing acute type A aortic dissection (aTAAD) in limited indications and experience. Short-term circulatory arrest is still necessary for antegrade deployment of aortic stent graft (ASG).

What's new?

From Jan.2017 to Apr.2019, 51 aTAADs (mean 55±12) were treated with modified 2HAR by retrograde deployment of ASG to cover clamping site of distal ascending aorta. 27% patients presented preoperative pericardial effusion, 16% shock, 16% carotid compromise, 6% CPR and 14% intubation. Mean clamping and bypass time were 71±21', 207±131' with lowest temperature 30±2°C. 1/3 ASGs were proximally deployed at zone 3, others at zone 2. There were 29% early mortality and 1 late mortality. Early and late complications were 69% and 47%. 31% developed acute kidney injuries (AKI). 46% follow-up patients found initial endoleak around proximal landing zone, Class 0a false lumen thrombosis (FLT), but only 12% persisted. The reintervention was 31%.

Most modified 2HAR combines antegrade chimney graft of left subclavian artery which making high

percentage of initial 0a FLT. The one-staged, mild hypothermic modified 2HAR for aTAAD does not prove better organ protection due to high percentage of AKI.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-54] Hybrid total arch replacement with direct antegrade in-situ fenestration (DAISF) of left common carotid artery and left subclavian artery for acute type A aortic dissection

Yi-Chun Lin¹, Mingli Li², Chia-Ying Lin², Ping-Chun Li², Hui-Han Lin², Ching-Feng Wu² (1.China Medical University, Department of Medicine, 2.China Medical University Hospital, Cardiovascular Surgery, 3.China Medical University Hospital, Cardiovascular Surgery)

What's known?

Hybrid total arch replacement (HTAR) with retrograde in-situ fenestration of supra-aortic branches has been managing acute type A aortic dissection (aTAAD) with great success. Direct antegrade in-situ fenestration (DAISF) on the frozen elephant trunk (FET) during total circulatory arrest (TCA) of HTAR surgery for aTAAD is never reported

What's new?

42 patients(31M, 11F, mean age 60±12) received HTAR for aTAAD from Jan.2017 to May 2019. The operation was proceeded with proximal anastomosis of ascending aortic graft (AAG) under cardiac arrest and debranch of innominate artery with heart beating and TCA for FET and DAISF of left subclavian artery (LSA) and then left common carotid artery (LCCA). The distal anastomosis of AAG was then completed with sandwich suturing technique.

The procedures succeeded in 100% patients with mean TCA/clamping time 40±8' and 65±19' . 9 preoperative shocks and 2 CPRs, 21% carotid compromise with 8 intubations and 6 comas came out 2 early- and 2 late-death. The early- and late-complications were 68.3% and 20.5%. The re-intervention was 13.5%. 8% endoleak was found around proximal FET.

HTAR with DAISF of LCCA and LSA for aTAAD has promising outcome with only minor chance of proximal endoleak and no supra-aortic branch occlusion.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-55] Initial Experience of Endovascular Aortic Repair using Iliac Branch Endoprosthesis

Tomoyuki Gentsu¹, Masato Yamaguchi¹, Koji Sasaki¹, Takuya Okada¹, Hidekazu Nakai², Katsuhiro Yamanaka², Atsushi Omura², Kenji Okada², Koji Sugimoto¹, Takamichi Murakami¹ (1.Department of Diagnostic and Interventional Radiology, Kobe University Hospital, 2.Department of Cardiovascular Surgery, Kobe University Hospital, 3.Department of Cardiovascular Surgery, Kobe University Hospital)

What's known?

To evaluate the initial outcome of endovascular aneurysm repair (EVAR) using Iliac Branch Endoprosthesis (IBE) in our institution.

What's new?

[Materials and Methods] Between October 2017 to October 2019, fifteen patients who underwent EVAR using IBE for aorto-iliac aneurysms or isolated common iliac aneurysms were retrospectively reviewed. Eighteen common iliac aneurysms (twelve patients with unilateral implantation, and three patients with bilateral implantation) were treated using IBE. The incidence rates of endoleaks on post-EVAR angiography were evaluated. The incidence rates of endoleaks and thrombus in the IBEs on post-op CT angiography were also evaluated. [Results] The implantation of IBE was successfully performed in all cases. The incidence rates of type III endoleaks (EL-III) was 17 % (3/18) on post-EVAR angiography. However, these three EL-IIIs spontaneously disappeared on post-op CT angiography. The incidence rates of thrombus in the IBE were 61% (11/18). IBE occlusion was observed in one case (5.6%) due to poor joint of the iliac branch component and bridging component. [Conclusion] The use of IBE for common iliac aneurysms was safe and effective. The incidence rates of EL-III on post-EVAR angiography was relatively higher, but all EL-III spontaneously disappeared on post-EVAR CT angiography. Thrombus in the IBE may cause the spontaneous disappearance of EL-III.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-1)

[MO-56] The efficacy of lumbar artery embolization concomitant with endovascular abdominal aneurysm repair to prevent type 2 endoleak

Masami Shingaki, Kazunori Isikawa, Tsuyoshi Shibata (Hakodate Municipal hospital)

What's known?

To estimate whether lumbar artery embolization (LAE) with EVAR contribute to the suppression of type 2 endoleak (T2EL) and aneurysm shrinkage or not

What's new?

From Jan 2017 to Apr 2019, we performed 198 cases of EVAR, and excluded the cases with EVAR with IIA embolization, post EVAR, AAA rupture, pararenal AAA, dissection, isolated iliac aneurysm and aorto-uniliac EVAR, and estimated 82 cases. We divided 82 cases into 3 groups, patent IMA: group P (n=16), occluded IMA without LAE (n=47): group N, occluded IMA with LAE: group E (n=19). Mean age was 76.3+-8.4 y/o, male was 64 cases. There was no significant difference in operation time between 3 groups (P: 109.6 min., N: 112.5 min. and E: 120.3 min.). In group E, we embolized 1.6+-0.7 lumbar arteries. T2EL 1 week after EVAR had the tendency of reduction but no significant difference (P: 4/12 (25.0%), N: 9/38 (19.2%) and E: 3/16 (15.8%); p=0.79). AAA diameter reduction 6 months after EVAR had the tendency of increase but no significant difference (P: 4/12 (25.0%), N: 12/34 (26.1%) and E: 6/10 (37.5%); p=0.65). We could not show the efficacy of LAE statistically but could obtain the tendency of T2EL reduction and aneurysm shrinkage

Presentation Awards

[L2-4] Presentation Awards

Moderators: Osami Kawarada (Hanwa Memorial Hospital) , Ravish Sachar (Cardiology, North Carolina Heart and Vascular, US)

Panelists: Takenobu Shimada (Kurashiki Central Hospital) , Tien Yu Wu (Cardiology, Shin Kong Wu Ho-Su Memorial Hospital, Taiwan)

2020年2月21日(金) 15:40 ~ 17:10 Hall L-2 (Exhibition)

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-57] Drug-Coated Balloon vs. Conventional Balloon Angioplasty in Dialysis Patients With Femoropopliteal Disease

Shigemitsu Shirai, Keisuke Hirano, Masahiro Yamawaki, Motoharu Araki, Norihiro Kobayashi, Yasunari Sakamoto, Shinsuke Mori, Tsutsumi Masakazu, Yohsuke Honda, Kenji Makino, Yoshiaki Ito (Saiseikai Yokohama City Eastern Hospital)

What's known?

Background: Recent randomized trials have shown the treatment benefits of use of a drug-coated balloon (DCB) over conventional percutaneous transluminal angioplasty (PTA) in patients with femoropopliteal (FP) disease. However, the effectiveness of DCB for dialysis patients remains unclear.

Method: This was single center observational study. Between 2016 and 2019, consecutive 97 dialysis patients, who underwent PTA (n=61) or DCB (n=36) for femoropopliteal disease, were assessed retrospectively. The primary endpoint is primary patency at 12 months.

What's new?

Result: There was no significant difference in patient background, limb, and lesion background between 2 groups. Patients treated with DCB had significantly higher rates of primary patency (81% vs. 47%, P=0.04). Cox proportional analysis showed that treatment with DCB was independently associated with primary patency (hazard ratio 2.6, P=0.04).

Conclusions: This study suggested superior 1-year outcome using DCB compared with PTA in dialysis patients with femoropopliteal disease.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-58] Downstream effect: slow-flow phenomenon after drug-coated balloon angioplasty for femoropopliteal occlusive disease

Kei Sato¹, Akihiro Takasaki¹, Tairo Kurita¹, Ito Masaaki¹, Dohi Kaoru¹, Matsuda Masami², Masayuki Tomita³ (1.Mie University Graduate School of Medicine, Department of Cardiology and Nephrology, 2.Mie University Graduate School of Medicine, Vascular and Heart Center, 3.Mie University Graduate School of Medicine, Vascular and Heart Center)

What's known?

Slow-flow phenomenon occasionally happens after drug-coated balloon usage, although slow-phenomenon itself has not been systematically evaluated. The purpose of this study is to compare distal flow velocity and volume before and after DCB dilation.

What's new?

We evaluated 28 limbs from 23 patients who had successfully undergone endovascular treatment for FP

lesions with IN.PACT DCB. “Before DCB (= after pre-dilation)”, “just after DCB”, and “10 minutes after DCB” flow velocity and volume were measured distal to the target lesion, using doppler ultrasound (DUS) and laser doppler flowmetry (LDF).

“Before DCB”, “just after DCB”, “10 minutes after DCB” flow velocity was 43.5 ± 21.5 cm/sec, 38.7 ± 18.1 cm/sec, 43.9 ± 31.4 cm/sec and flow volume was 21.4 ± 18.8 ml/min, 20.0 ± 21.2 ml/min, 25.0 ± 23.2 ml/min respectively. Flow velocity decreased significantly just after DCB ($P < 0.01$). Flow velocity and volume increased significantly 10 minutes after DCB ($P < 0.05$, $P < 0.01$ respectively).

Slow-flow phenomenon so-called “Downstream effect” after IN.PACT DCB was confirmed, though the decreased flow was transient change.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-59] Endoluminal Bypass for Severe Calcified Femoro-Popliteal Lesions

KAZUKI TOBITA, Hirokazu Miyashita, Shigeru Saito (Shonan Kamakura General Hospital)

What's known?

Background: The endoluminal bypass was reported good outcome for severe femoro-popliteal lesions like TASC2 class C or D. Calcification is predictor to worsen patency after endovascular therapy (EVT), however, it was not known efficacy of endoluminal bypass for calcified lesions.

Objective: To demonstrate outcome of endoluminal bypass for calcified lesions.

What's new?

Methods: The consecutive 73 patients and 94 limbs undergoing EVT for femoro-popliteal lesion with endoluminal bypass from February 2017 to April 2018 in our institution were retrospectively analyzed. Severe calcification was defined as PACSS grade 4. Primary outcome was primary patency. Secondary outcomes were death, myocardial infarction, stroke, major amputation, any target revascularization (TLR), graft thrombosis (GT) and graft infection.

Results: We included 24 limbs as severe calcification group and 70 limbs as non-severe calcification group. Two groups has same primary patency rate [87.5 % vs 87.1 %, $p=0.811$]. Any TLR was not different between two groups, however, GT was significantly higher in severe calcification group [12.5 % vs 2.9 %, $p=0.049$]. And mortality with severe calcification was significantly higher too [20.8 % vs 4.2 %, $p=0.022$].

Conclusion: Endoluminal bypass had good patency even for calcified lesions, however, graft thrombosis and mortality were higher.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-60] Poor Clinical Outcome and Indicators of Endovascular Therapy for Aortoiliac Artery In-stent Restenosis Lesions

Akiko Tanaka¹, Kazunori Horie¹, Inoue Naoto^{1,2} (1.Sendai Kousei Hospital, 2.Tokyo Kamata Medical Center, 3.Tokyo Kamata Medical Center)

What's known?

Favorable results of endovascular therapy (EVT) for aortoiliac artery (AIA) lesions were reported. However, there were few data of additional EVT for in-stent restenosis (ISR) of AIA lesion.

What's new?

This study was a single-center, cohort study. Between January 2010 to June 2018, we treated 957 de novo

AIA lesions by EVT. Fifty of them needed additional EVT due to ISR and we studied these 50 ISR lesions. Mean follow up period was 1,216 days. Eight lesions were in-stent occlusion (ISO) and 42 were non-ISO. Thirty-two lesions were performed adjunctive stenting. Thirty-four lesions were external iliac artery (EIA). During follow-up period, 8 lesions needed repeat revascularization in the treated vessel (TVR). Freedom rates from TVR, comparing with the 957 de novo lesions, were significantly poor (log-rank $p=0.0012$, show in the Fig). Predictors of TVR were ISO ($p=0.005$) and small diameter of primary stent ($< 8\text{mm}$) ($p=0.024$). Overall, Adjunctive stenting was not affected to TVR ($p=0.376$). However, limited to the non-ISO lesions, adjunctive stenting avoided TVR (0/24 vs 4/18, $p=0.019$). Furthermore, in non-adjunctive stenting lesions, EIA lesion showed high TVR rates comparing with common iliac artery (4/15 vs 0/3, $p<0.001$).

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-61] Predictors of Restenosis following Endoluminal Bypass Implantation for Femoro-Popliteal Lesions

Hirokazu Miyashita, Kazuki Tobita, Takahiro Hayashi, Shohei Yokota, Hiroaki Yokoyama, Koki Shishido, Futoshi Yamanaka, Yutaka Tanaka, Saeko Takahashi, Shigeru Saito (Shonan Kamakura General Hospital)

What's known?

Endoluminal bypass have provided good clinical outcome in the previous literature, however we have limited data about predictors of adverse event after endoluminal bypass implantation in femoro-popliteal lesions.

What's new?

Consecutive 73 patients and 110 limbs undergoing EVT for femoro-popliteal lesion with endoluminal bypass from February 2017 to April 2018 in our institution were retrospectively analyzed. Primary outcomes were primary patency (defined as no evidence of significant restenosis) and assisted primary patency (defined as freedom from clinical driven target lesion revascularization). Secondary outcomes were major adverse cardiovascular event (MACE), major adverse limb event (MALE), graft thrombosis (GT) and graft infection. Mean follow-up period was 419days, primary patency rate was 86.2% and assisted primary patency rate was 93.6%. We had 9.6% of MACE, 10.4% of MALE, 4.2% of GT and none of graft infection. The risk factors for primary patency are young age and cilostazol use in our cohort.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-62] 1-year clinical outcomes of Drug Coated Balloon for Femoropopliteal Lesions compared with Drug Coated Stent

Kenji Ogata, Yoshisato Shibata (Miyazaki Medical Association Hospital)

What's known?

Background

Some clinical trials have shown the clinical efficacy of drug coated balloon (DCB) for femoropopliteal (FP) lesions. Recently, DCB has been approved in Japan. In Japan, the clinical efficacy is little known in the real world.

What's new?

Purpose

To compare the clinical efficacy of DCB and drug coated stent (DCS) at 12-months

Methods

The present study was a retrospective observational study. Patients who had symptomatic (Rutherford classification 2 to 5) de novo lesions in the FP artery (TASC II classification A to C) were enrolled. The primary endpoint was primary patency at 12-month. Secondary endpoint was compromised major adverse events; death, major amputation and clinically driven target revascularization.

Results

92 patients were enrolled (DCB, 46 patients; DCS, 46 patients). Patients and lesions characteristics were shown in the table. Primary and secondary outcomes were shown in the figure.

Conclusions

The primary and secondary outcomes of DCB were similar to DCS for FP lesions. DCB would be beneficial to avoid stent-related complications after the procedure.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-63] Safety and efficacy of Echo-guided Exoseal use for hemostasis of common femoral artery puncture (Echosomeal technique)

Yohsuke Honda, Masafumi Mizusawa, Shigemitsu Shirai, Kenji Makino, Masakazu Tsutusmi, Shinsuke Mori, Yasunari Sakamoto, Norihiro Kobayashi, Motoharu Araki, Masahiro Yamawaki, Yoshiaki Ito (Saiseikai Yokohama-city eastern hospital)

What's known?

Exoseal was a completely extra-vascular hemostatic device. Though, device failure could happen. We considered Echo-guided Exoseal use (Echosomeal technique) was helpful to prevent device failure.

What's new?

Consecutive 15 patients underwent Echosomeal technique for hemostasis of CFA artery. First step of Echosomeal technique was echo-guided puncture to penetrate only anterior wall without calcification. Next step was confirmation of Exoseal system operation intra-vessel by echography and visual confirmation of optimal operation in visual indicator. Final step was compression with echo-probe and check the hemostasis by color Doppler imaging. If failed hemostasis was confirmed, we could perform prompt and optimal compression supported with echography. In this cohort, 2 patients suffered from Exoseal failure, but prompt compression was performed, and complication had not occurred.

Echosomeal technique was helpful for hemostasis using Exoseal. Visual confirmation of Exoseal operation intra-vessel and complete hemostasis with echography were the keywords in this technique.

(2020年2月21日(金) 15:40 ~ 17:10 Hall L-2)

[MO-64] The efficacy of novel technique "Calc.Break Technique - Fracking Method" for CFA calcification from IVUS assessment

Takuya Haraguchi (Sapporo Cardio Vascular Clinic)

What's known?

The outcome of endovascular intervention for common femoral artery (CFA) lesion almost never achieves our

expectations. That is reason why the plaque in CFA consists of calcification resisting intervention. Thus, we created the novel approach for calcification. We evaluated the effect of new technique named **“Calc.Break Technique -Fracking Method-”** which performs hydraulic fracturing with needle to make large cracks in calcification during balloon dilation. We retrospectively analyzed to compare standard balloon angioplasty (SBA) with adding our new technique (Fracking) in single center, and mainly assessed the minimal lumen area (MLA) from intravascular ultrasound (IVUS).

What's new?

A total of 16 patients (mean age, 77 ± 9 years; 63% male) were underwent endovascular intervention without stent implantation in CFA calcified lesion. Severe calcification was 94%. MLA before treatment was 4.68 ± 2.26 mm². The technical time of Fracking was 551 ± 206 seconds. Consequently, MLA on IVUS after SBA and Fracking were 12.20 ± 3.78 mm², 23.24 ± 4.71 mm² ($p<0.001$), respectively. The complication was none. 30-days primary patency and freedom from target lesion revascularization were 100%. **“Calc.Break Technique -Fracking Method-”** had great effect for CFA calcification to obtain the optimal lumen area more than balloon angioplasty.

Presentation Awards

[L1-5] Presentation Awards

Moderators: Naoto Inoue (Tokyo Kamata Hospital, Tokyo Heart Center) , Ting Zhu (Zhongshan Hospital, Fudan University)

Panelists: Tasuku Kozasa (Mimihara General Hospital) , Ye, Kaichuang (Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, China)

2020年2月21日(金) 17:10 ~ 18:40 Hall L-1 (Exhibition)

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-65] A case of stenting for venous thrombosis due to Iliac compression syndrome and observing the degree of intima coverage with a vascular endoscope

Takanobu Mitarai, Yasuhiro TANABE, Nozomi KOTOKU, Toshiki KAIHARA, Masashi KOGA, Yuki ISHIBASHI, Takumi HIGUMA, Yoshihiro AKASHI (St.Marianna University school of Medicine)

Case overview

The case was 70s years old female. Those who are going to the oncology after surgery for rectal cancer and on adjuvant chemotherapy. The patient had a significant swelling and pain in her left leg since several days ago. As a result of lower limb vein ultrasonography and contrast CT, a thrombus from the left common iliac vein to the popliteal vein was observed, and a thrombus was also observed in the pulmonary artery. The cause was considered to be Iliac compression syndrome from CT examination.

Procedure summary

In the acute phase, catheter-directed thrombolysis (CDT) was performed with the venous filter in place. On the fourth day after CDT, venography was performed from the left popliteal vein. Although clots disappeared, blood flow was blocked in the compression area. Since balloon ballooning alone did not improve the condition, Nitinol Stent was placed. This markedly improved venous blood flow. Thereafter, CDT was terminated, and DOAC was continued. 50 days after stent placement, the lower limb vein filter was collected. Upon recovery, the inside of the stent was observed with a vascular endoscope. Red thrombi remained and some of the struts were exposed, but some struts were covered by the intima. In the short period of about 1 month after detention, a partial covering of strut was observed, so further covering is expected in the chronic phase.

Clinical time course and implication

Currently, there is no established antithrombotic drug dose and duration after stent placement for Iliac compression syndrome. To date, there have been no reports of vascular endoscopy evaluation after vein placement. The findings of this case indicated that in some cases the antithrombotic drug could be terminated in the chronic phase.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-66] A case of Deep Venous intervention for right deep vein thrombosis(DVT) with iliac vein compression syndrome.

Yasuto Hoshino (Fukushima Daiichi Hospital)

What's known?

We know that both intervention treatment and surgical operation have each merits, demerits and limitations

for peripheral vascular diseases. And the answer to that [What is the best treatment?] may depend on the “situation” in the hospitals in many cases, that is the number, the level, and the other factors of doctors. Realistically, the collaboration interventionalist and vascular surgeon is not easy because of many causes such “situations”, even though many of us wish. What is the best collaboration, or how to collaborate is the new problem in the peripheral vascular diseases, I think.

What's new?

I report three cases. CASE1: PAD case with severe calcified lesion in SFA and popliteal artery. Firstly, we tried EVT, but it failed because of the lesion length and hardness. So I consulted to surgeon, and FP bypass using autograft was performed. CASE2: Cystic adventitial degeneration of popliteal artery case. Even though after removal, the stenosis remained. I performed EVT some times in three years. CASE3: DVT case with iliac vein compression syndrome. Firstly, vascular surgeon performed thrombectomy using 4Fr.Forgaty catheter, and after that I performed EVT and deployed stent in right common iliac vein.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-67] a rare cause of ‘dramatic’ May-Thurner syndrome with acute deep venous thrombosis

Eiji Miyauchi, Ippei Kosedo, Takashi Sakoda, Atsushi Fukuzaki (Sendai Medical Association Hospital)

Case overview

a 60s female underwent posterior lumbar interbody fusion (PLIF) because of lumbar spinal canal stenosis. She developed deep vein thrombosis (DVT) in her left leg 6 days later. CT showed the large amount of thrombus was recognized to be from left proximal common iliac vein (CIV) to distal popliteal vein (POPV). and it also demonstrated left CIV was compressed by her 5th lumbar vertebra, which moved forward dramatically compared to preparation.

Procedure summary

To make vein open, catheter-directed venous thrombolysis (CDT) was performed and anticoagulation therapy started, but they were not effective. Therefore, we added stent implantation in stenosis of left CIV. After Self-expandable bare nitinol stent (SMART 12.0/80mm) was deployed, we succeeded recanalization of iliac segment.

Clinical time course and implication

After stent implantation, she relieved from symptom of her left leg completely. Enhanced CT revealed right common iliac artery (CIA) moved forward because of stent and the stents kept patent. Iliac compression is usually caused by the chronic development of bone spur in lumbar vertebra and gradual tortuous change of iliac artery. In our case, despite the dramatic shift of the lumbar vertebra, stent implantation was effective to keep CIV open (shown in Figure).

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-68] A case of iliac vein compression syndrome treated with catheter directed thrombolysis and EVT.

Takafumi Fuwa¹, Makoto Utsunomiya², Yuuki Endo¹, Shin Makabe¹, Tadashi Yanagishi¹, Yutaka Koyama¹, Toshiya Mutamatsu¹, Naoto Inoue¹ (1.Tokyo Kamata Hopspital, 2.Toho University Medical Center Ohashi Hospital, 3.Toho University Medical Center Ohashi Hospital)

Case overview

The patient was 90 years old female. She complained of left lower leg swelling and pain from four days ago. D-dimer was high, and deep vein thrombosis was suspected. Contrast enhanced CT showed a lot of thrombus filling from the left iliac vein to the popliteal vein. In addition, there was also a compression of the left iliac vein, and it was suggested that the cause of deep vein thrombosis was iliac vein compression syndrome.

Procedure summary

First, we inserted a temporary IVC filter from the right internal jugular vein. And then, we punctured popliteal vein, and inserted 4Fr sheath. Due to the large amount of thrombus, we inserted fountain catheter, and continuous administration of urokinase was started. Three days later, angiography revealed that most of the thrombus had disappeared, but the blood flow was not completely resumed. 10mm balloon dilatation was performed on the iliac vein and blood flow was improved. One month later, angiography showed iliac vein compression and development of collateral circulation. We deployed 14*60mm self-expanding stent in the same site.

Clinical time course and implication

The symptoms improved immediately after procedure, and no recurrence has occurred.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-69] Successful treatment for inferior vena cava filter-related thrombus by the removal of the inferior vena cava filter with the catheter directed thrombolysis

Sayaka Funabashi, Akihiro Tsuji, Jin Ueda, Hiroya Hayashi, Satoshi Kitahara, Sayuri Nakayama, Kyoko Hirakawa, Tatsuo Aoki, Takeshi Ogo, Satoshi Yasuda (National Cerebral & Cardiovascular Center)

Case overview

A 37-year-old pregnant woman, who developed deep venous thrombosis (DVT) in right femoral vein was admitted to the nearby hospital. Unfractionated heparin (UFH) was started, but DVT remained unchanged. Subsequently, inferior vena cava (IVC) filter was deployed for preventing pulmonary embolism. However, enhanced contrast tomography revealed the DVT exacerbation from IVC to bilateral popliteal vein. She became IVC filter-related venous thrombosis and DVT worsened, and was transferred to our center for treatment.

Procedure summary

We decided to perform the catheter directed thrombolysis (CDT), and then to remove the IVC filter. The CDT was performed from the IVC to the left leg.

Clinical time course and implication

The IVC filter was also removed safely. Her lower limb symptom was improved, and she was discharged from the hospital with oral anticoagulant therapy. The IVC filter-related venous thrombosis is one of the serious complications of IVC filter, which resulted in severe post thrombotic syndrome. We report the treatment guidelines for IVC filter-related thrombosis at our hospital.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-70] A Very Tough Case of Removal of DENALI IVC Filter with Tangled Snare.

Hidekazu Aoyama, Shin Hasegawa, Nobuo Ishiguro, Masayuki Nakamura, Shingo Yoshioka, Akimitsu Tanaka, Miyuki Ando, Ryosuke Kametani (Nagoya Tokushukai General Hospital, Department of Cardiology)

Case overview

30s male with PE and DVT on chemotherapy after surgery of rectal cancer. In the former hospital, IVC filter was tilted at the implant, and snare for removal was tangled filter, then both filter and snare could not be removed. After consultation with our surgeon, because of high risk with surgical operation, it was decided to be removed by EVT first.

Procedure summary

We prepared bi-directional system through the jugular and femoral. The hook of filter was sunk into the IVC. Grasping the leg near the hook and pulling it forcefully from above, the filter eventually turned upside down. Still, the space between the hook and vein wall was couldn't create. By grasping both above and below, the filter moved downwards, the hook was pushed into the left renal vein. Grasping the hook again and pulling above, but invading into the previous invaded vein wall again. Then, we prepared the IABO balloon to rupture, and pulled filter upward powerfully, the hook came off and I could snare from below. We pulled it toward femoral, but the burbs of the legs pierced the common femoral wall and it was difficult to remove them. Finally, we successful extracted.

Clinical time course and implication

The patient was discharged without complication and with replaced new IVC filter.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-71] Analysis of failure factors while shifting anatomical landmark to ultrasound-guided puncture of subclavian vein for chemo-port implantation in early and late period

Yuling Hsu¹, Mingli Li², Chiaohsin Kung³ (1.China Medical University, Department of Medicine, 2.China Medical University, Cardiovascular Surgery, 3.China Medical University, Cardiovascular Surgery)

What's known? :

All patients who scheduled for chemo-port implantation had been shifted from ALP to UGP since Oct.2018 for the concern of safety and professionalism. The age, gender, body-mass index (BMI), cancer type, diameter of target vein (DTV), skin to anterior-wall-of-target vein depth (SAVD) were regarded as possible failure factors and were compared in early 5 months and later months.

What's new? :

Total 172 patients (aged 31-87) have completed chemo-port implantation by UGP of subclavian vein with 1.8 ± 1.5 attempts (67% 1 attempt) and pain level 3.4 ± 2 in 26 ± 8 minutes. The complications included 1 pneumothorax, 1 pulmonary embolism, 3 catheter tip malposition and 1 late catheter occlusion. The success rate is 90.9% vs 96.8% in early and late stage with DTV as the failure factors. BMI with even smaller DTV is another factor in late stage period.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-1)

[MO-72] Endovascular Treatment for Acute Iliofemoral Vein Thrombosis

Michihisa Umetsu^{1,2}, Hitoshi Goto¹, Daijiro Akamatsu¹, Hirofumi Sugawara¹, Ken Tsuchida¹, Yoshitaro Yoshida¹, Shunya Suzuki¹, Shinichiro Horii¹, Norinobu Ogasawara¹, Hirokazu Takahashi¹, Takashi Kamei¹
(1.Division of Vascular Surgery, Department of Surgery, Tohoku University Graduate School of Medicine, 2.Kesen-numa City Hospital, 3.Kesen-numa City Hospital)

What's known?

[Background] Endovascular treatment (EVT) is one of the optional treatments for DVT. In our institute, EVT is performed for the patients who show acute symptomatic iliofemoral vein occlusive thrombosis. We show our strategies and the outcome of treatments.

What's new?

[Procedure] Pharmacomechanical catheter-directed thrombolysis (PCDT) approaching from popliteal vein is our basic strategy. First urokinase injection is from Fountain catheter for thrombolysis. Subsequently, mechanical thrombectomy is usually performed using 7 Fr guiding catheter. When the thrombus removal is inadequate, continuous thrombolysis using urokinase and unfractionated heparin via catheteris performed. When stenosis was still remained after several times of PCDT, ballooning or stenting is considered.

[Result] We performed systemic anticoagulant therapy for 64 VTE patients from Jul 2017 to Dec 2018. Among them, EVT was performed for seven cases. Median age was 63 y.o. (IQR: 30-71). PCDT was performed for all the cases. The median frequency of PCDT was 3 (range 1-3). Stenting was performed for one iliac compression case. The primary thrombolysis was successful in all the cases. A case of protein S and C deficiency reoccluded within 30 days. The circumference of the leg was significantly reduced in a week.

[Conclusion] Endovascular treatment has a great possibility for acute severe DVT.

Presentation Awards

[L2-5] Presentation Awards

Moderators: Yuji Ikari(Tokai University School of Medicine), Ralf Langhoff (Angiology, St. Getrauden-Hospital, Germany)

Panelists: Dai Ozaki (Juntendo University Urayasu Hospital) , Chang Hwan Yoon(Cardiology, Seoul National University Bundang Hospital, Korea)

2020年2月21日(金) 17:10 ~ 18:40 Hall L-2 (Exhibition)

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-73] Evaluation of prognosis for peripheral arterial disease by nutrition and muscle mass parameters

Masaki Sano, Kazunori Inuzuka, Kazuto Katahashi, Tatsuro Yata, Takafumi Kayama, Yuta Yamanaka, Endo Yusuke, Naoki Unno (Division of Vascular Surgery, Hamamatsu University School of Medicine,)

What's known?

Background: Peripheral arterial disease (PAD) patients have a poor prognosis due to the presence of various comorbidities. It is important to select endovascular therapy or bypass surgery for PAD patients with consideration of life prognosis. Although several evaluation method for PAD patients were suggested, it is difficult to evaluate life prognosis of PAD patients.

What's new?

Methods: From January 2009 to July 2017, PAD patients underwent revascularization procedures in our institution were enrolled in this study. Patients were divided in two groups according to 2-year prognosis (survival group: n=96, death group: n=53). Risk factors for atherosclerosis (age, body mass index (BMI), smoking, hypertension, hyperlipidemia, diabetes mellitus, hemodialysis), comorbidities, past histories (coronary artery diseases, cerebrovascular disease), Fontaine classification, Wifl stage, SVS/AAVS score, psoas muscle index (PMI) = psoas muscle area (at the level of L3 on CT)/height (m)², and Geriatric Nutrition Risk Index (GNRI) = 14.89 × Serum albumin (g/dl) + 41.7 × BMI/22 were investigated retrospectively.

Results: Significant differences were observed in age, hemodialysis, Fontaine classification, Wifl stage, SVS/AAVS score, PMI, and GNRI. **Conclusion:** Development of novel scoring system using SVS/AAVS score, Wifl stage, PMI, and GNRI might enable to predict 2-year prognosis of PAD patients underwent revascularization procedures.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-74] Short versus prolonged dual antiplatelet therapy (DAPT) duration after iliac artery stent implantation: a retrospective single-center study

Shutaro Goda, Yoshiaki Ito, Keisuke Hirano, Masahiro Yamawaki, Motoharu Araki, Norihiro Kobayashi, Yasunari Sakamoto, Shinsuke Mori, Masakazu Tsutsumi, Yohsuke Honda, Kenji Makino (SAISEIKAI Yokohamashi TOBU Hospital)

What's known?

In this study, we performed a retrospective single-center analysis on 164 patients comparing short-DAPT (within 1 year, n=57) and prolonged-DAPT (over 1 year, n=107) excluding anticoagulation drug users. 1 year and 2 years after endovascular stenting, primary patency was comparable between the groups (100% short

vs 100% prolonged in 1 year, 98.25% short vs 100% prolonged in 2 years, $p=0.169$). BARC 2, 3 or 5 events occurred in 1 year and 2 years without any difference between the groups (5.26% short vs 3.74% prolonged in 1 year, $p=0.646$, 7.02% short vs 9.35% prolonged in 2 years, $p=0.611$).

What's new?

In this study, we performed a retrospective single-center analysis on 164 patients comparing short-DAPT (beyond 1 year, $n=57$) and prolonged-DAPT (over 1 year, $n=107$) excluding anticoagulation drug users. 1 year and 2 years after endovascular stenting, primary patency was comparable between the groups (100% short vs 100% long DAPT in 1 year, $p>0.05$, 98.25% short vs 100% long DAPT in 2 years, $p>0.05$). BARC 2, 3 or 5 events occurred in 1 year and 2 years without any difference between the groups (5.26% short vs 3.74% long in 1 year, $p>0.05$, 7.02% short vs 9.35% long in 2 years, $p>0.05$).

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-75] Prognostic ability of C-reactive protein with patient received endo vascular treatment complicated with chronic kidney disease; from I-PAD registry

Yoshiteru Okina¹, Takashi Miura², Tamon Kato³, Yusuke Kanzaki⁴, Naoyuki Abe⁵, Daisuke Yokota⁶, Takashi Yanagisawa⁷, Ken Nishikawa^{1,8}, Shun Nakazawa^{1,9}, Shunichi Tsukada^{1,10}, Mitsuru Kagoshima^{1,11} (1.Joetsu general hospital, 2.Nagano Municipal Hospital, 3.Nagano Municipal Hospital, 4.Shinonoi General Hospital, 5.Japanese Red Cross Society Nagano Hospital, 6.Saku Central Hospital, 7.Saku Central Hospital, 8.Aizawa Hospital, 9.Suwa Central Hospital, 10.Japanese Red Cross Society Suwa Hospital, 11.Okaya City Hospital)

What's known?

Background: The prognosis of patients impairing kidney function with high circulating C-reactive protein (CRP) is unclear.

What's new?

Methods: From August 2015 to July 2016, 335 consecutive patients (427 limbs) who underwent endo vascular treatment (EVT) were enrolled in the I-PAD registry. The patient with normal kidney function and undergoing hemodialysis were excluded, the remaining 137 patients were divided into two group; chronic kidney disease with CRP elevation, chronic kidney disease alone. Primary end point is MACLE (cardiac death, MI, stroke, major/minor lower extremity amputation) after 3 year. The degree of chronic kidney disease was defined as a decrease in eGFR <60 ml/min/1.73m². High level of CRP was defined as an increase in CRP >1.0 mg/dL.

Result: Increasing CRP level was found in 20 patients (14.6%). The CRP elevation with chronic kidney disease was significantly increased the incidence of MACLE compared to chronic kidney disease alone group (45.0% vs. 25.6%, $p=0.04$). In a univariable Cox regression, increasing CRP level is the strong predictor of MACLE after 3 year (HR: 2.19, 95%CI 1.04-4.62, $p=0.04$).

Conclusion: CRP elevation with the patient impairing kidney function negatively affects MACLE.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-76] Impact of Residual SYNTAX Score after Endovascular Treatment for Peripheral Artery Disease

Tamon Kato (Shinshu University School of Medicine)

What's known?

A history of coronary artery disease history is a risk factor for peripheral artery disease (PAD), with incomplete revascularization patients having significantly higher mortality risk over complete revascularization ones. However, the relationship between residual stenosis in the coronary artery and with clinical PAD outcome remains unclear.

What's new?

Methods: From August 2015 to July 2016, 116 consecutive patients (147 limbs) who underwent endovascular treatment (EVT) were recruited from among 4 institutes in Nagano for this multicenter, prospective, observational study. We performed coronary artery revascularization for EVT in case of the patients with have coronary artery stenosis and followed them for 3 years. A total of 113 PAD patients were enrolled and, divided into 2 groups, residual high SYNTAX (n=23) and residual low SYNTAX (n=90), based on a cut-off SYNTAX score of 6 as determined by receiver operating characteristic curve analysis (area under curve=0.73 $p<0.0001$). Results: Both AFS (49.5% vs. 90.9%, $p<0.0001$) and survival (55.4% vs. 91.9%, $p<0.0001$) were significantly lower in the high SYNTAX group than in the low SYNTAX group. According to Cox regression analysis, residual SYNTAX score was a strong predictor of AFS (HR 1.2, 95%CI 1.12-1.38, $p<0.0001$) as well as survival (HR 1.2, 95% CI 1.13-1.40, $p<0.0001$) after EVT for PAD.

Conclusion: Residual SYNTAX score after EVT associates significantly with AFS and survival in patients with PAD.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-77] Impact of Hyperuricemia on Patients with Chronic Heart Failure Who Underwent Endovascular Therapy; from I-PAD 3year Registry

Ken Nishikawa¹, Ayumu Nagae², Takashi Miura³, Tamon Kato², Yusuke Kanzaki⁴, Naoyuki Abe⁵, Daisuke Yokota⁶, Yoshiteru Okina¹, Shun Nakazawa¹, Shunichi Tsukada¹, Mitsuru Kagoshima¹ (1.Department of Cardiovascular Medicine, Joetsu General Hospital, 2.Department of Cardiovascular Medicine, Shinshu University School of Medicine, 3.Department of Cardiovascular Medicine, Shinshu University School of Medicine, 4.Department of Cardiovascular Medicine, Shinonoi General Hospital, 5.Department of Cardiovascular Medicine, Japanese Red Cross Society Nagano Hospital, 6.Department of Cardiovascular Medicine, Iida Hospital)

What's known?

It is known that hyperuricemia is associated with an increased risk of cardiovascular disease. However, it remains unclear whether hyperuricemia carries a risk of cardiovascular disease in patients with peripheral artery disease and diabetes.

What's new?

Among patients with hyperuricemia, overall survival and freedom from MACLE were significantly lower than those without (64.7% vs. 87.5%, $P<0.01$; 67.5% vs. 92.6%, $P=0.01$). The prognosis of patients with diabetes who exhibit hyperuricemia is worse than patients with diabetes mellitus who don't exhibit hyperuricemia.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-78] The influence of postoperative ambulatory status on graft flow after infrainguinal bypass surgery with vein grafts

Keisuke Miyake^{1,2}, Shinsuke Kikuchi¹, Daiki Uchida¹, Atsuhiro Koya¹, Yoshiki Sawa², Nobuyoshi Azuma¹

(1.Department of Vascular Surgery, Asahikawa Medical University, 2.Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine, 3.Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine)

What's known?

Ambulatory status is known as an important predictor of patients prognosis in peripheral artery disease (PAD). However, the association between ambulatory function and graft performance is not well studied. The aim of this study is to elucidate the relationship between the postoperative ambulation and the time course of graft flow and caliber.

What's new?

This study compared postoperative change of graft flow and caliber after infrainguinal bypass between postoperative ambulatory and non-ambulatory patients. Postoperative ambulatory patients showed maintained graft flow, while non-ambulatory patients showed marked decrease. This study showed patients who would keep or regain ambulatory status after revascularization would benefit more from bypass compared with the non-ambulatory patients, because ambulatory status would preserve graft function. This study also implies that patients' physical activity would be important criteria to select the appropriate revascularization strategy.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-79] Vascular Access Intervention Therapy for Acute occlusion of arteriovenous fistulae : distal trans-radial approach (dTRA)

Shunsuke Kakizaki, Amane Kozuki, Yoichi Kijima, Ryoji Nagoshi, Hiroyuki Shibata, Daichi Fujimoto, Syokan Kyo, Eri Masuko, Tomohiro Miyata, Junya Shite (Osaka Saiseikai Nakatsu Hospital)

What's known?

Acute occlusion of arteriovenous fistulae (AVF) is a commonly observed severe complication, contributing significantly to morbidity and hospitalization in the dialysis patient. The AVF should be reopened as soon as possible to resume regular dialysis treatment but there are no confirmed standard methods of vascular access intervention therapy (VAIVT) for acute occlusion of AVF. Retrograde cephalic venous approach or antegrade brachial arterial approach are conventional methods. However, there are several limitations such as difficulty of wiring, risk of re-occlusion at time of hemostasis, and access site-related complications.

What's new?

To overcome these limitations, we started to perform VAIVT with distal trans-radial approach (dTRA) . From January 2017 to September 2019, We experienced 67 cases (45 patients) that were underwent successful VAIVT for acute occlusion of AVF. The approach sites were depended on the operator' s discretion. At 12 cases, dTRA were finally selected. The average procedure time and *fluoroscopy time* were significantly shorter compared with conventional approach (55.9±36.9 min vs 95.8±62.8 min, $p<0.01$, 16.3±13.4 min vs 29.7±19.1 min, $p<0.01$, respectively). And there were no access site-related complications.

(2020年2月21日(金) 17:10 ~ 18:40 Hall L-2)

[MO-80] 10-year Clinical Outcomes After Endovascular Therapy

Tomonori Katsuki, Yamaji Kyohei, Hiramori Seiichi, Tomoi Yusuke, Soga Yoshimitsu, Ando Kenji (Kokura Memorial Hospital)

What's known?

Mid-term outcomes after EVT had been well-evaluated; however, 10-year outcomes after EVT are rarely reported.

What's new?

The current study evaluated very long clinical outcomes for the patients who underwent EVT for de novo lesions. We divided the patients into the three groups according to lesion location (AI, FP, and BTK groups). We obtained 91% clinical follow-up information at 10 years. Within 10 years after EVT, more than half of patients who underwent EVT for AI or FP lesions died, while three-fourths of patients who underwent EVT for BTK lesions died. The median life expectancies after EVT were 8.4 years in patients with AI lesions, 9.1 years in those with FP lesions, and 4.4 years in those with BTK lesions, while the life expectancy in the age- sex matched general Japanese population was 14.7 years. Though the risk of TLR after EVT for AI lesions was relatively low at 0.8% per year beyond five years up to 10 years, non-TLR continued to occur irrespective of lesion location up to 10 years.

Presentation Awards

[L1-6] Presentation Awards

Moderators: Shinsuke Nanto (Nishinomiya Municipal Central Hospital) , Jun Li (Cardiology, University Hospitals of Cleveland, US)

Panelists: Yoshiaki Shintani (Ageo Central General Hospital) , Chul-Min Ahn (Cardiology, Yonsei university severance Cardiovascular Hospital, Korea)

2020年2月22日(土) 09:00 ~ 10:30 Hall L-1 (Exhibition)

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-81] A case of novel drug eluting stent occlusion observed by multiple intravascular imaging modalities

Kotaro Higuchi, Amane Kozuki, Yoichi Kijima, Ryoji Nagoshi, Ryudo Fujiwara, Hiroyuki Shibata, Atsushi Suzuki, Fumitaka Soga, Eri Ota, Shokan Kyo, Junya Shite (Osaka Saiseikai Nakatsu Hospital)

Case overview

The case was 76-year-old male with Rutherford class 5 CLI. EVT for SFA occlusion was performed. Two drug-eluting stents (Eluvia stent) were implanted at the center of the lesion, from mid to distal portion of SFA. Both end, proximal SFA and P1, were finished with balloon angioplasty. The ulcer healed after EVT, however, rest pain relapsed 3 months later.

Procedure summary

Angiography showed occlusion from the orifice of SFA. After wire passage and manual thrombus aspiration, IVUS showed thrombus at both end of DES, however, patent lumen without thrombus was observed at the body of DES. Two additional DES were implanted to cover thrombus and good flow was obtained. High-resolution angioscopy and OFDI revealed thin white layer covering DES implanted 3 months without thrombus attachment.

Clinical time course and implication

The inside of the occluded stent is often filled with thrombus in case of DES occlusion at early phase or stent graft occlusion. The present case of Eluvia showed different feature. This might be due to anti-thrombotic polymer of Eluvia stent.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-82] A case with true deep femoral artery aneurysm who successfully underwent restoration using stent-grafts

Nariko Ikemura, Masayoshi Kimura, Teturo Nishimura, yuki Mtubara, Daisuke Ito, Akiteru Kojima, Eigo Kishita, Yusuke Nakagawa, Jun Shiraishi, Masayuki Hyogo, Takahisa Sawada (Japanese Red Cross Kyoto Daiichi Hospital)

Case overview

An 81-year-old male with partial remitted stage IV lung cancer was referred to our department for treating the left true aneurysm of deep femoral artery (t-DFAA) with trend of enlargement. Since surgical treatment was impossible for his decreased respiratory function, we decided to treat t-DFAA by endovascular treatment.

Procedure summary

An 8Fr sheath was inserted via the right common femoral artery (CFA) to the left CFA contralaterally. Firstly, we embolized the deep femoral artery (DFA) branch flowing into the aneurysm using coils and vascular plug to prevent type 2 end-leak. Secondly, an 8.0/100mm VIABAHN was implanted in the distal DFA and

implanted an 8.0/59 VBX in the proximal DFA with adequate overlapping. As the proximal diameter of DFA was 14mm, post dilatation was performed with a 14mm balloon. Just after the procedure, the two stents were completely separated caused by shortening VBX stent by post dilatation. Therefore, we additionally deployed an 8.0/59mm VBX between them with overlapping. Angiogram showed Type 1 end-leak in the proximal side of the DFA. Subsequently, a SMART stent was added in the proximal DFA. The final angiogram revealed optimal blood flow without any complications.

Clinical time course and implication

He keeps good patency in his left DFA after the procedure.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-83] A case with severely calcified CFA stenosis which was optimally revascularized using X-ray guided needle penetration and CROSSER

Matsubara Yuki, Masayoshi Kimura, Nariko Ikemura, Daisuke Ito, Akiteru Kojima, Eigo Kishita, Yusuke Nakagawa, Jun Shiraishi, Masayuki Hyougo, Takahisa Sawada (Kyoto First Red Cross Hospital)

Case overview

A 50-year-old male presented with worsening intermittent claudication in his left foot. CT showed severe stenosis with a heavily calcified nodule (CN) in the left common femoral artery (CFA). Endovascular treatment was planned because of skin disease in his groin.

Procedure summary

A 6Fr guiding sheath was inserted via the right CFA as a contralateral approach. After successful guidewire(GW) crossing, IVUS revealed a huge CN in the CFA, and the wire passed near the healthy vessel wall. It was estimated that conventional balloon dilatation would stretch only the healthy vessel wall and result in suboptimal angioplasty. Therefore, we intentionally penetrated through the center of the CN to obtain optimal dilatation as follows. Firstly, an 18G one-part puncture needle was bent with 30 degrees, and the needle was inserted from just proximal non-occluded superficial femoral artery to non-occluded external iliac artery through the CN in the CFA under multi-direction X-ray guidance step-by-step like drilling. Secondly, GW was retrogradely advanced from the needle into the guiding sheath and made a pull-through system. Finally, we successfully obtained optimal dilatation using a 9.0 mm balloon.

Clinical time course and implication

He has had no recurrent claudication and restenosis for 9 months after the procedure.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-84] CFA occlusion after End vascular treatment for CLI

Koichi Hoshimoto, Kazuyuki Hamada, Manabu Takai, Bun Yashiro, Yuzuru Yamambe (Yokohama general hospital)

Case overview

The patient was a 72-year-old woman who suffered from skin discoloration, rest pain, and ulcer around the right first toe.

3years ago, she has undergone minor amputation at the metatarsal bone level, and the wound had healed. The right SPP score was low(dorsal 21, planter 22mmHg), and computed tomography and ultrasonic echo examination showed diffuse stenosis in the right SFA.

Because she had undergone retroperitoneal hematoma after antegrade puncture for the previous EVT, we planned EVT to use cross over approach.

Procedure summary

After puncture left CFA with severe calcium, we performed EVT for right SFA and used an angioseal for hemostasis.

After two weeks later, although the right SPP level elevated(dorsal 35, planter 50mmHg), she was suffered from rest pain and coldness of the left limb.

Computer tomography showed left CFA occlusion and we thought that the angioseal made the thrombus. We removed the thrombus by surgery, but she had been suffered from rest pain of her left amputation stump, so we performed EVT for left SFA and BK lesion.

Clinical time course and implication

After that, her symptoms improved on outpatient, and her right ulcer disappeared.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-85] Successful EVT to CFA-SFA with Heavily Calcification after surgical bypass

Akihiro Matsui, Hata Shinya, Nakabayashi Keisuke, Kaneko Nobuhito, Tanaka Kazuhiko, Ando Hiroshi, Shimizu Minoru (Kasukabe Chuo General Hospital)

Case overview

Endo-atherectomy to CFA-lesion with heavily calcification is golden standard strategy. However some complications sometimes occur, such as infection, pseudo-aneurysm. And also puncture of this site after this surgery is often difficult. Recently, endovascular therapy (EVT) is developing in this area by arrival of new device and technology.

We will show typical EVT case of this area. Case (66 y.o. male) admitted to our hospital because of severe intermittent claudication (IC) of left-leg. ABI of left-leg was flat. A long time ago, PTFE bypass (EIA-DFA) graft was implanted for IC. Although his symptom was better after this surgery, it didn't disappear completely. In this time, his IC is getting worse due to new CTO of distal-SFA.

Procedure summary

To approach to this lesion, we determined to perform EVT to CTO of CFA to proximal-SFA with heavily calcification at first. Bidirectional approach from right-CFA and mid-left-SFA by Omote-pan lead to successful of wiring to this lesion. After making pull-through wiring condition and aggressive lesion preparation, SUPERA(6.5mm) was implanted. In spite of heavily calcification, round expansion was seen after post-dilatation by IVUS. After this procedure, EVT to CTO of distal-SFA was performed easily by SUPERA too.

Clinical time course and implication

His symptom completely disappeared after our procedure.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-86] Different ways of successful bail out from thrombotic occlusion of VIABAHN stents

Masao Yamasaki (Department of Cardiology, NTT Medical Center Tokyo)

Case overview

A 67 years old female presented with left intermittent claudication for several weeks. MRA showed complete occlusion of two 5.0/150mm VIABAHN stents implanted in left SFA CTO lesion. We performed thrombolysis with urokinase for 3 days. Then we confirmed disappearance of thrombus inside two VIABAHN stents. She presented again with same symptoms 16 months later. Echography showed complete occlusion of two VIABAHN stents. We performed thrombus aspiration and thrombectomy using 4mm dilated balloon like Fogarty catheter, and succeeded complete thrombus removal.

Procedure summary

We performed thrombolysis using Fountain catheter with urokinase 240,000 U bolus injection followed by urokinase 240,000 U per day infusion for 3 days. Then we confirmed disappearance of thrombus inside two VIABAHN stents, and added balloon dilatation to both VIABAHN stents and left POP lesion. The patient discharged with no symptoms after procedures, but she presented again with same symptoms 16 months later. Echography showed complete occlusion of two VIABAHN stents in left SFA lesion. We performed thrombus aspiration with 6F Rebirth pro2, following thrombolysis using Fountain catheter with urokinase 120,000 U bolus injection followed by urokinase 240,000 U per day infusion for 2 days. We performed angiography 2 days later, revealing still complete thrombus occlusion of two VIABAHN stents. Then we performed thrombus aspiration many times with 6F TVAC, thrombectomy using 4mm dilated balloon like Fogarty catheter, and thrombus aspiration again using GOGO catheter (5.5F straight catheter). Finally we succeeded complete thrombus removal, and implanted LIFESTENT SOLO 6.0/80mm in the distal edge of VIABAHN stent, following balloon dilatation from proximal edge of VIABAHN stent to POP lesion.

Clinical time course and implication

Here we report two different ways of successful bail out technique (thrombolysis and thrombectomy) for thrombotic occlusion of VIABAHN stents implanted in SFA CTO lesion in the same patient.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-87] Efficacy of the CROSSER system for multiple lesion flossing with subsequent Angioplasty to modify Heavily calcified lesions in common femora artery(CRASH)

Satoru Nagatomi¹, Shigeo Ichihashi¹, Hiroshi Yamamoto², Shinichi Iwakoshi¹, Hidehiko Taguchi¹, Masahiro Inagaki¹, Yutaka Yoshiyama¹, Takahiro Nakai¹, Yuichi Shimohara¹, Kimihiko Kichikawa¹ (1.Nara Medical University, 2.Sumitomo Hospital, 3.Sumitomo Hospital)

Case overview

Severely calcified lesion is one of the most challenging cases in endovascular treatment. The calcified plaque can inhibit the sufficient expansion of the lesions. We developed a novel CRASH technique useful for lesion modifications and following lesion expansion.

Procedure summary

From September 2016 to August 2019, the CRASH technique was indicated for four patients suffering from intermittent claudication or critical limb ischemia due to severely calcified CFA stenosis. After successful guidewire passage, flossing the lesions by CROSSER system was conducted, followed by balloon angioplasty using non-compliant balloons or scoring balloons. Then another guidewire was attempted to penetrate through a different part of the calcified plaques, followed by CROSSER flossing and balloon angioplasty. The procedure was repeated via 4 routes in three cases and 2 routes in the other case.

Clinical time course and implication

Technical and clinical successes were achieved in all cases. The angiogram followed by CRASH revealed favorable antegrade flow and sufficiently dilated lesion without the need for stent implantation. Immediately after the procedure, ankle brachial index values increased and symptoms of the patients improved.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-1)

[MO-88] Progressive SFA dissection after cutting and high pressure balloon angioplasty successful salvage

Wen-Jung Chung, Shu-Kai Hsueh, Chien-Hao Tseng (Kaohsiung Chang Gung Memorial Hospital)

Case overview

45 y/o male with Lt heel chronic wound (Furthurford 5 Fountaine 4) for 6m/o with ABI 0.2. CTA : Lt CFA ,SFA ,popliteal artery severe calcified and tight stenosis and angiogram revealed Lt poplital artery subtotal occlusion.

Procedure summary

Rt CFA approach.0.035 stiff terumo radifocus wire passed Lt SFA , Connect wire advanced to LT ATA. After 4mm angiosculpt ,6mm Flextome cutting balloon, 7mm conquest ballon prepare Lt SFA lesion. DEB to Lt CFA.BMS to Lt p-SFA lesion.After stenting, progressively extensive Lt SFA spiral dissection from Lt p-SFA stent edge to LT d-SFA. 6.0x50mm covered the distal dissection flap but between stent edge stent dissection worsen.Final 2nd Viabahn deployed to the gap of stent and SFA flow rescued.Final angio to Lt BTK with good flow.

Clinical time course and implication

The patient woud status and resting pain improved

Presentation Awards

[L2-6] Presentation Awards

Moderators: Kimihiro Komori(Nara Medical University), Brian DeRubertis (Vascular Surgery, UCLA Medical Center, US)

Panelists: Veera Suwanruangsri (Vascular Surgery, Maharat Nakhon Ratchasima Hospital, Thailand) , Hsuan-Li Huang(Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation)

2020年2月22日(土) 09:00 ~ 10:30 Hall L-2 (Exhibition)

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-89] Clinical Outcomes of endovascular treatment for isolated internal iliac artery aneurysm

Katsuki Oji¹, Norio Hongo², Noritaka Kamei², Hiro Kiyosue², Shunro Matsumoto², Madoka Kawano³, Keitaro Okamoto³, Tomoyuki Wada³, Shinji Miyamoto³, Rieko Shuto⁴ (1.Oita Redcross Hospital, Radiology, 2.Oita University Faculty of Medicine, Radiology, 3.Oita University Faculty of Medicine, Radiology, 4.Oita Oka Hospital, Radiology)

What's known?

Once endoleak occurs, re-intervention is quite challenging in the endovascular treatment of isolated internal iliac artery aneurysms (IIAA). We believe embolization of all branches from the aneurysm is indispensable for endovascular management of IIAs.

What's new?

The study subjects were 17 patients who had undergone endovascular treatment for isolated IIAA in our hospital since 2007. Distal coil embolization was performed by ipsilateral or contralateral femoral artery approach. The cohort was divided into two groups according to the proximal occlusion, coil embolization group(n=9) and stent-graft group (n=8).

The technical success rate was 100% with no endoleak. There was significant difference ($P<0.0001$) in regard to cost between coil embolization and stent-graft group about proximal occlusion. During follow up period (mean 56.2 months), no aneurysmal enlargement was observed. In 2 cases, additional iliac stent-graft was needed due to proximal coil compaction and migration.

Endovascular treatment for isolated IIAA showed excellent outcomes, when embolization of all branches was performed completely. In proximal occlusion, stent-graft is reasonably recommended in terms of treatment cost and durability.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-90] Preoperative MRI for predicting thromboembolic complications during endovascular treatment for iliac artery occlusion

Koji Maruyama¹, Ryota Kawasaki¹, Keigo Matsushiro¹, Yutaka Koide¹, Shohei Seike², Takuya Okada², Masato Yamaguchi², Koji Sugimoto², Takamichi Murakami² (1.Hyogo Brain and Heart Center at Himeji, 2.Kobe University Hospital, 3.Kobe University Hospital)

What's known?

Preoperative imaging studies to predict thromboembolic complications (TEC) during EVT for iliac CTO have not been systematically investigated.

What's new?

This single-institution study included 53 iliac CTO lesions in 52 patients (mean age, 70.4 years) who

underwent preoperative MRI using IR-SSFP sequence following successful EVT between January 2010 and March 2018. TEC were defined as distal embolization, in-stent thrombotic occlusion, and in-stent protrusion greater than 25% of the stent cross-sectional area confirmed by angiogram and IVUS, regardless of symptoms. The signal intensity of iliac CTO to iliopsoas muscle ratio (TMR) was calculated on MRI images. A multivariate analysis was performed to clarify predictors of TEC during EVT. TEC were observed in 12 vessels (22.6%): distal embolization (n = 3), in-stent thrombotic occlusion (n = 2), in-stent protrusion (n = 7). A cut-off value >2.57 of TMR had a sensitivity of 91.7%, a specificity of 78.0%, a positive predictive value of 55.0%, and a negative predictive value of 97.1% for detecting TEC during EVT. On multivariate analysis, TMR >2.57 was the only independent factor in association with TEC (odds ratio, 35.90; 95% confidence interval: 3.20, 404.00; $p = 0.004$). Consequently, preoperative MRI is useful for predicting TEC during EVT for iliac CTO.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-91] Efficacy of novel method of CT fusion three-dimensional roadmapping for recanalization of complex iliac chronic total occlusion

Naoki Hayakawa², Noriyoshi Ohki², Masataka Arakawa¹, Satoshi Hirano¹, Sandeep Sakya¹, Kotaro Miyaji¹, Syunichi Kushida¹, Junji Kanda¹ (1.Asahi General Hospital, the department of cardiovascular medicine, 2.Asahi General Hospital, the department of radiology, 3.Asahi General Hospital, the department of radiology)

What's known?

The usefulness of EVT has been established in the iliac artery, however, there still exists difficult cases. When performing intraluminal angioplasty, it tends to require more procedure time and the number of wires. Several imaging-guided wiring techniques have been reported, however each method has weaknesses associated with technical difficulty and limitations of the devices.

What's new?

We propose novel EVT method that uses a three-dimensional(3D) roadmap that fuses preoperative enhanced CT and angiographical images. We named this method the CT fusion 3D roadmap (CTf3D-RM) technique. We retrospectively analyzed 36 patients undergoing EVT for iliac CTO. We classified them into two groups: EVT using CTf3D-RM (3D group, n=14) and conventional EVT (standard group, n=22). The lesion length were almost similar (3D;103.0±39.3 vs Standard;98.6±37.3mm, $P=0.73$). Both groups had high success rate and low complication rate. However, the number of guidewire was significantly less in 3D group ($2.78±1.31$ vs $4.36±2.01$, $p=0.0138$). The wiring time was significantly shorter in 3D group ($15.6±10.23$ vs $44.6±35.3$, $P=0.0052$). We concluded that CT fusion 3D-roadmapping technique for iliac CTO reduced the number of guidewire and wiring time. Although this technique doesn't require special devices or techniques, it has shown the possibility of simplifying complex iliac CTO treatment.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-92] Impact of duplex ultrasound guide wiring on achieving optimal vessel preparation and patency in recanalization of superficial

femoral artery chronic total occlusion

Yasunari Sakamoto, Keisuke Hirano, Yoshiaki Ito, Masahiro Yamawaki, Motoharu Araki, Norihiro Kobayashi, Shinsuke Mori, Masakazu Tsutsumi, Yosuke Honda (Saiseikai Yokohama City Eastern Hospital)

What's known?

One means which may improve poor outcomes of endovascular therapy (EVT) for superficial femoral artery (SFA) chronic total occlusion (CTO).

What's new?

The current retrospective single center study evaluated 239 SFA CTO lesions successfully treated with EVT and implanted self-expandable nitinol stent in the periods of April 2007 to December 2018. Subject was divided into 2 groups, whether guidance of duplex ultrasound (DUS) or not during CTO wiring. DUS group:65 lesions and non-DUS group:174 lesions were evaluated angiographic dissection patterns after initial balloon angioplasty immediately after successful wire passing of SFA CTO lesions and also compared those primary patency rate. Restenosis was defined as peak systolic velocity ratio of >2.4 by duplex scan. TASC II CD lesions was 89% (58/65) in DUS group and 79% (138/174) in non DUS group ($p=0.05$). There was no significant difference in the balloon diameter of the initial dilatation immediately after successful wire passing (DUS group 3.7 ± 0.5 mm and non-DUS group 3.8 ± 0.5 mm, $p=0.17$). Incidence of non-severe dissection (NHLBI classification A to C) was significantly high ($p<0.01$) in the DUS group 58% (38/65) compared with non-DUS group 21% (37/174). 3-years primary patency rate was significantly high in DUS group 67.8% compared with non-DUS group 60% ($p=0.03$).

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-93] “Crossvac” - Efficacy of the new flossing strategy for severe calcified lesions

Yukihiro Yamaguchi, Hideyuki Takimura, Toshiya Muramatsu, Reiko Tsukahara, Masatsugu Nakano, Noriko Amaike, Emi Tajima, Yosuke Komatsu (Tokyo General Hospital)

What's known?

Severe calcified lesion is one of the toughest cases for EVT. We often use Crosser® for the calcification, however, it can be widened to just 2mm and that is not enough at all. So, we would like to propose a new and aggressive flossing method “Crossvac” which enables us to reduce eccentric calcification, gets enough lesion modification. First, we cross the lesion EVAC (aspiration catheter) and then Crosser® inside. The tip of the EVAC is diagonally curved, twist it to direct the short side toward calcification and move both. We will show the procedures and the efficacy in our hospital.

What's new?

We performed 16 cases with the novel method between September 2018 and August 2019. The endpoints were technical and angiographic success rate, the lesion modification of MLA measured by IVUS and the primary patency at three months post procedure. In results, technical and angiographic success rate were both 100%. We used IVUS in all cases, the lesion modification was significantly larger compared with EVT using only Crosser®. After three months, restenosis and re-occlusion were not observed. In our conclusion, “Crossvac” is quite useful for severe calcified lesions.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-94] The impact of cardiac functions on loss of patency in patient with peripheral artery disease presenting femoro-popliteal lesions treated by anti-restenotic devices

Sho Nakao, Osamu Iida, Mitsutoshi Asai, Masaharu Masuda, Shin Okamoto, Takayuki Ishihara, Kiyonori Nanto, Takashi Kanda, Takuya Tsujimura, Shota Okuno, Toshiaki Mano (Kansai Rosai Hospital)

What's known?

Although cardiac function (CF) is well-known factor associated with an increased risk for adverse events after endovascular therapy (EVT), whether the impact of CF on loss of patency in patients with PAD presenting femoro-popliteal (FP) lesions has not been studied.

What's new?

We retrospectively evaluated 404 limbs (critical limb ischemia:30%, TASC C/D lesion:51%) belonging to 333 patients (average age:74±8 years, male:73%) who underwent EVT for FP lesions treated by anti-restenotic devices (polymer-free paclitaxel eluting stent n=250, polymer-coated paclitaxel eluting stent n=11, paclitaxel-coated balloon n=20 or stentgraft n=123) from June 2012 to May 2018. Primary outcome measure was 12-month primary patency, and predictors for loss of patency were evaluated by Cox proportional hazards regression analysis, while primary patency was analyzed by Kaplan-Meier method. Twelve month primary patency was 83.4%. After multivariate analysis, stroke volume (SV) (hazard ratio [HR]: 0.981, 95% confidence interval [CI] 0.963-0.999, P=0.037) as well as female gender (HR: 2.151, 95% CI: 1.232-3.755, P=0.007), TASC C/D lesion (HR: 2.101, 95% CI: 1.065-4.141, P=0.032) were independently associated with loss of 12 month primary patency.

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-95] Impact of Scoring Balloons on Percutaneous Transluminal Angioplasty Outcomes in Femoropopliteal Lesions

Kazunori Horie¹, Akiko Tanaka¹, Masataka Taguri², Naoto Inoue¹ (1.Sendai Kousei Hospital, 2.Yokohama City University, 3.Yokohama City University)

What's known?

We aimed to investigate the efficacy of scoring balloons (SBs) for the immediate success of PTA in femoropopliteal lesions.

What's new?

We enrolled consecutive 398 patients with de novo femoropopliteal lesions treated using PTA between 2013 and 2019. We compared the procedural success rate among patients who underwent PTA with and without SBs after 1:1 propensity score matching. A total of 168 patients were included in the propensity-matched cohort. The scoring PTA (n = 84) reduced the inadequate dilatation (22.6% vs. 42.9%; p = 0.005) and the postprocedural severe dissection (16.7% vs. 29.8%; p = 0.043) as compared with the nonscoring PTA (n= 84). Therefore, the rate of provisional stent implantation was significantly lower after the scoring PTA (13.3% vs. 29.8%; p = 0.008). Multivariate analysis revealed that the use of SBs (p<0.001) and prolonged inflation time (p<0.001) were independent predictors of successful PTA, whereas chronic total occlusion (p=0.005) and longer lesion length (p=0.005) were predictors of unsuccessful PTA. Among 72 patients in the matched population, IVUS examination was performed. In the lesions with calcium arc 180°, scoring PTA was associated with the larger lumen expansion ratio (0.83± 0.19 vs. 0.66 ±0.10, p = 0.009).

(2020年2月22日(土) 09:00 ~ 10:30 Hall L-2)

[MO-96] Primary patency of drug-coating balloon angioplasty for small femoropopliteal lesions as compared to plain old balloon angioplasty

Shinsuke Mori, Hirano Keisuke, Shigemitsu Shirai, Kenji Makino, Yohsuke Honda, Masakazu Tsutsumi, Yasunari Sakamoto, Norihiro Kobayashi, Motoharu Araki, Masahiro Yamawaki, Yoshiaki Ito (Saiseikai Yokohama City Eastern Hospital)

What's known?

It has been reported about poor clinical outcome after stent implantation for small femoropopliteal (FP) lesions. Little data exists on patients who have undergone drug-coating balloon (DCB) angioplasty for small FP lesions. We compared clinical outcomes of DCB angioplasty with POBA for small FP lesions.

What's new?

This was a single center non-randomized retrospective study. From April 2017 to April 2019, 55 patients (75 lesions) who underwent DCB angioplasty or POBA for de novo small FP lesions were included. A small vessel is defined as a vessel with a reference vessel diameter <4mm measured by quantitative vascular analysis. The patients were classified into two groups: patients treated with DCB angioplasty (DCB group, 22 patients, 26 lesions) and patients treated with POBA (POBA group, 33 patients, 49 lesions). We compared primary patency at 6- and 12-months after each treatment. Regarding patient and lesion characteristics, there were no significant differences between the two groups in age, gender, and the percentage of diabetes mellitus, hemodialysis, critical limb ischemia, poor run-off. The mean lesion length and reference vessel diameter were similar between two groups (166 ± 104 mm vs. 136 ± 91 mm, $p=0.19$ and 3.9 ± 0.2 mm vs. 3.8 ± 0.3 mm, $p=0.07$, respectively). The primary patency at 6 months was significantly higher in DCB group than POBA group (92% vs. 67%, $p<0.05$), however the primary patency at 12 months was similar between the two groups (55% vs. 44%, $p=0.12$). Consequently, primary patency at 12 months was similar between DCB angioplasty and POBA for small FP lesion.

Presentation Awards

[L1-7] Presentation Awards

Moderators: Masato Nakamura (Toho University Ohashi Medical Center), Sahil A. Parikh (Columbia University Medical Center)

Panelists: Shih-Ying, Shih-Ying Sung (Vascular Surgery) , Hiroki Takahashi (Yamagata University Faculty of Medicine)

2020年2月22日(土) 10:30 ~ 12:00 Hall L-1 (Exhibition)

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-97] Simplified percutaneous deep venous arterialization(pDVA) for non-option CLI patients by percutaneous direct needle puncture of tibial artery and vein under ultrasound guidance (AV spear technique)

Yuichi Shimohara, Shigeo Ichihashi, Takahiro Nakai, Yutaka Yoshiyama, Satoru Nagatomi, Masahiro Inagaki, Masanori Yamashita, Hidehiko Taguchi, Shinichi Iwakoshi, Kimihiko Kichikawa (Department of Radiology, Nara Medical University)

Case overview

A male in 80' s was referred due to bilateral CLI. Angiography demonstrated occluded medial and lateral plantar arteries and dorsalis pedis. It was difficult to recanalize below-the-ankle lesion by conventional angioplasty, so we performed percutaneous deep vein arterialization (pDVA) by using AV spear technique.

Procedure summary

Percutaneous penetration was done using 21G needle under ultrasound guidance nearby ankle joint where posterior tibial vein runs superficially to posterior tibial artery. Then micro-guidewire was inserted from the distal puncture site into a sheath, establishing through and through wire. A microcatheter was advanced to the AV penetration point over the wire. It was retracted, and a hydrophilic wire was utilized to get into a tibial vein antegradely. Balloon angioplasty was done to create AV fistula, followed by angioplasty of plantar vein. After venoplasty, brisk flow was observed from tibial artery to plantar veins. SUPERA stent® was deployed at the fistula, securing expansion of it and blood flow.

Clinical time course and implication

The technique was employed for bilateral limbs, both of which were successful. Skin perfusion pressure increased by 40mmHg bilaterally after pDVA.

Non-option CLI patients are at high risk of major amputation, so pDVA has been gaining attention. Several cases reported high wound healing rates after pDVA. However, in many countries, the dedicated device is not available. So, we report a simplified technique for pDVA.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-98] CYP2C19 polymorphism is associated with amputation rates in patients taking clopidogrel after endovascular therapy for critical limb ischemia

Jenkuang Lee (National Taiwan University College of Medicine and Hospital)

What's known?

Clopidogrel is a pro-drug requiring cytochrome P450 (CYP) 2C19 enzyme to be oxidized into its active form and previous studies have shown inter-individual variety in platelet reactivity with clopidogrel treatment. Pharmacogenomics play a major role in anti-platelet effect after clopidogrel use for patients with coronary artery disease (CAD), but it is not clear in peripheral artery disease (PAD).

What's new?

This study investigated the association between CYP2C19 polymorphisms and the clinical outcomes in critical limb ischemia (CLI) patients accepting endovascular therapy (EVT) procedures. It was found that genetic profiles significantly influenced amputation-free survival or all-cause mortality in these patients. Furthermore, the polymorphism number is negatively associated with the clinical outcomes after multivariate analysis. Different anti-platelet therapy other than clopidogrel may be considered in patients with CYP2C19 loss-of-function allele.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-99] A case of pedal arch angioplasty for dorsalis pedis artery puncture preceding endovascular treatment for occluded anterior tibial artery

Satoshi Tasaka, Tetsuya Nomura, Kenshi Ono, Yu Sakaue, Naotoshi Wada, Natsuya Keira, Tetsuya Tatsumi
(Department of Cardiovascular Medicine, Kyoto Chubu Medical Center)

Case overview

An 81-year-old man with ischemic refractory ulcers on the right lower extremity.

Procedure summary

Angiography showed occlusion of the superficial femoral artery (SFA), anterior tibial artery (ATA), and dorsalis pedis artery (DPA). After upstream revascularization, we electively performed infrapopliteal angioplasty. Antegrade guidewire easily got into subintimal space of the proximal ATA. Therefore, we switched to the retrogradely approaching procedure. Because the exit point of the occluded ATA was unclear, we approached the occluded DPA via the pedal arch. However, the guidewire was too rigid to advance into the occluded ATA. Therefore, we retrogradely dilated the DPA and punctured it, targeting the existing guidewire. Thereby, we could establish a bidirectional approach and successfully introduce the antegrade guidewire into the retrograde microcatheter. We dilated the occluded ATA and DPA for a prolonged period and finally achieved favorable recanalization of the occluded below-the-knee arteries.

Clinical time course and implication

The refractory ulcers healed favorably.

Bidirectional approaches such as distal site puncture and a trans-pedal approach are critical for successful endovascular treatment (EVT), and they have some strong and weak points, respectively. Taking advantage of the merits of these different bidirectional approaches, we performed successful EVT for the occluded below-the-knee arteries.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-100] The association among neutrophil-to-lymphocyte ratio and prognosis in patients with critical limb ischemia

Min-I Su¹, Cheng-Wei Liu² (1.Taitung Mackay Memorial Hospital, 2.Tri-service General Hospital, Songshan branch, 3.Tri-service General Hospital, Songshan branch)

What's known?

The neutrophil-to-lymphocyte ratio (NLR) was associated with poor prognosis in patients with cancer and peripheral artery disease. The association between NLR and mortality is not comprehensively reported in patients with critical limb ischemia (CLI).

What's new?

The study consisted of 198 patients with age 74 ± 11 years, BMI 23.5 ± 4.2 kg/m², 52.5% male, and 15.2% presented with acute limb ischemia. The patients with $NLR > 5$ vs. < 5 had greater in-hospital mortality (17.2% vs. 2.9%, $P = 0.001$), all-cause mortality (36.6% vs. 17.1%, $P = 0.002$), cardiac-related mortality (20.4% vs. 7.6%, $P = 0.012$), major adverse limb events (24.7% vs. 13.3%, $P = 0.009$), major adverse limb events (24.7% vs. 10.5%, $P = 0.009$) at one year. NLR was independently associated with in-hospital mortality (adjusted HR: 1.062, 95% CI: 1.027-1.098, $P < 0.001$). The significant associations were found in the $NLR > 5$ vs. < 5 patients regarding all-cause mortality (adjusted HR: 2.987, 95% CI: 1.528-5.839, $P < 0.001$) and cardiac-related mortality (adjusted HR: 4.714, 95% CI: 1.695-13.108, $P < 0.001$). Each increment of NLR was associated with all-cause mortality (adjusted HR: 1.026, 95% CI: 1.009-1.044, $P = 0.003$) and a tendency toward a significant association between each increment of NLR and cardiac-related mortality (adjusted HR: 1.024, 95% CI: 1.000-1.050, $P = 0.053$). $NLR > 5$ vs. < 5 was associated with cardiac mortality (adjusted HR: 2.960, 95% CI: 1.164-7.524, $P = 0.023$) and MALE (adjusted HR: 2.367, 95% CI: 1.094-5.123, $P = 0.029$). No significant association was found between NLR and in-hospital mortality and between NLR and MACE. **We concluded that** the patients with a greater NLR had significantly higher risks of mortality at one year in the patients with CLI, and NLR can be used to predict prognosis in these patients.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-101] A successful EVT for chronic total occlusion of BTK arteries with distal puncture and IVUS guided wiring

Wataru Takeuchi, Yokota Daisuke, Baba Tomoko, Karasawa Mitsuharu (Ritsuzankai Iida Hospital)

Case overview

A 87-year-old male who presented left 2nd-5th toe ulcers (Rutherford 5) was admitted to our hospital. He did not have diabetes and renal failure. His ankle brachial index (ABI) was 0.41 on left. Previous angiography revealed severe stenosis of superficial femoral artery, chronic total occlusion (CTO) of popliteal artery and anterior tibial artery (ATA) and tibioperoneal trunk (TPT). In that time, we treated superficial femoral artery and popliteal artery, however we failed wiring to the occlusive lesion of TPT by making large subintimal space. As a result, his ABI and his ulcers did not improve. Although additional catheter intervention was needed, the target lesions were severe; ATA lesion was long CTO and the dissection of TPT lesion had not healed. How should we treat?

Procedure summary

We used distal puncture and intro-vascular ultrasound (IVUS) guided wiring respectively. A 6Fr. sheathless guide-catheter (SheathLess PV) was inserted into the left femoral artery for ipsilateral antegrade approach. Firstly, we planned to cross the ATA antegradely, however the wire was advanced to subintimal space. Accordingly, retrograde approach with distal puncture from dorsal artery was attempted, and a 3g polymerjacket-wire was successfully inserted to antegrade micro-catheter. After that, we performed the

sequential balloon dilation using 2.0 mm and 2.5 mm non-compliant balloon. Secondary, we switched to treat the TPT. As expected, a wire was inserted into the subintimal space easily, and IVUS guided wiring technique was attempted. In the IVUS findings, the first wire was inserted into subintimal space from the proximal part of CTO. Because it was so difficult that the second wire was recrossed from the beginning of occlusive lesion, a 40g tapered-wire (Astato XS 9-40) was punctured from subintimal lumen to true lumen with IVUS guide at the end of CTO. Finally a floppy wire was advanced to distal of peroneal artery. After dilatation with 2.5 mm non-compliant balloon, blood-flow toward below the knee (BTK) restarted and improved.

Clinical time course and implication

The patients wound was improved in about two months after the procedure. BTK lesions in a patient of critical limb ischemia (CLI) are often complex, and there are several techniques for crossing the lesions. We used distal puncture technique and IVUS guided wiring technique, and the final results were good. Handling of several techniques could be necessary when we treat the CLI patients like this case.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-102] Effects of PCSK9 inhibitor on adverse limb outcomes in patients with critical limb ischemia

Yusuke Sato, Hiroyasu Uzui, Takahiro Aiki, Tada Hiroshi (University of Fukui hospital)

What's known?

Background: The proprotein convertase subtilisin/kexin type 9 inhibitor (PCSK9-I), evolocumab, reduced the risk of cardiovascular event in patients with peripheral artery disease in FOURIER trial. However, the effects of evolocumab on adverse limb events in patients with critical limb ischemia (CLI) is still unclear.

What's new?

Method: This was a single center, prospective observational study. A total of 39 patients with CLI were enrolled between November 2016 to May 2019. The subjects were divided into 2 groups based on evolocumab administration: evolocumab-treated group: E group (mean 69.4±11.7 years, n=14) and evolocumab non-treated group: Non-E group (mean 74.0±8.8 years, n=25). The primary outcomes were defined amputation-free survival (AFS), overall survival and wound-free limb salvage. Mean follow-up period was 18±11 months.

Result: The patients receiving evolocumab had a lower hazard regarding AFS (hazard ratio, 0.22; 95% confidence interval, 0.05-0.99; P=0.048) and a higher proportion of wound-free limb salvage at 12 months (E group [93%] vs Non-E group [56%], P=0.028) and 18 months (93% vs 56%, P=0.028). Otherwise, evolocumab administration was not associated with overall survival.

Conclusion: Evolocumab administration may be associated with the better outcome of AFS in CLI patients. Additionally, long-term administration of evolocumab over 12 months may decrease wound-free limb salvage.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-103] A case of severe limb ischemia that was very difficult to treat

due to severe calcification

Yoshikazu Nakamura^{1,2}, Makio Muraishi², Tatsuya Nakama² (1.Heartlife Hospital, 2.Tokyo Bay Urayasu Ichikawa medical center, 3.Tokyo Bay Urayasu Ichikawa medical center)

Case overview

The case is a 64-year-old man with the right first and third finger ischemic ulcers (Rutherford classification 5)

Procedure summary

We performed EndoVascular Therapy(hereinafter abbreviated as EVT.) for stenosis of the right superficial femoral artery and the anterior tibial artery because of the right first and third finger ischemic ulcers (Rutherford classification 5) one month ago, but they did not improve. At the time the posterior tibial artery was obstructed before the ankle joint with severe calcification. So this time we performed EVT for the posterior tibial artery. The wire somehow passed through, but the balloon catheter didn't not pass. Even if using Guidezilla, badform technique, pierce technique, it did not pass. We thought it would not pass due to calcification. When the calcification was reduced with the innerpierce technique using a PTGBD needle, the balloon catheter passed easily.After that, it was expanded and flow was obtained. From the above, we thought that innerpierce technique could be one of the treatment options for calcified lesions that are difficult to pass even with various techniques.

Clinical time course and implication

The patients wound status was improved after the procedure.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-1)

[MO-104] A new model for predicting the timing of restenosis after infrapopliteal angioplasty

Takashi Yanagiuchi¹, Taku Kato¹, Takanori Hiroe², Shinya Yamazaki¹, Syunpei Ushimaru¹, Hirokazu Yokoi¹, Kan Zen³ (1.Rakuwakai Otowa Hospital, Department of Cardiology, 2.Kyoto University Graduate School of Medicine, Department of Biostatistics / Medical Education Center, 3.Kyoto University Graduate School of Medicine, Department of Biostatistics / Medical Education Center)

What's known?

Objective:Occurrence of restenosis after infrapopliteal angioplasty for critical limb ischemia (CLI) patients has been reported to delay ischemic wound healing. Therefore, early detection of restenosis and repeat intervention may be recommended. On the other hand, it is sometimes difficult to evaluate vessel patency correctly after infrapopliteal angioplasty. The purpose of this study was to predict the date of angiographic restenosis after infrapopliteal angioplasty.

What's new?

Methods:We analyzed 60 de novo infrapopliteal lesions (35 CLI patients, 38 limbs) that underwent successful angioplasty and follow-up angiography within 3 months from the procedure.

Results:The restenosis rate at follow-up angiography (median time, 41 days [IQR, 27–58 days]) was 38% (23/60). After adjustment for covariables,higher age, chronic total occlusion (CTO), and lower C-reactive protein (CRP) were correlated with restenosis. In our experience, severe ischemia often suppresses the elevation of CRP in CLI patients. Therefore, we considered lower CRP may be related to the severity of ischemia before angioplasty. Additionally, we made a new model for predicting the period that the probability of restenosis would be more than 70% : "Days = 200 -2.1 Age -13 CTO + 3.3 CRP" ($R^2 = 0.81$).

Conclusion:The proposed predictive model allows estimation of angiographic restenosis after infrapopliteal

angioplasty.

Presentation Awards

[L2-7] Presentation Awards

Moderators: Norihiko Ohura (Kyorin University School of Medicine) , Young guk Ko(Yonsei University Severance Hospital, Korea)

Panelists: Yaxue Shi (Vascular Surgery, Long Hua Hospital Shanghai University of Traditional Chinese Medicine, China) , Kiyonori Nanto (Kansai Rosai Hospital)

2020年2月22日(土) 10:30 ~ 12:00 Hall L-2 (Exhibition)

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-105] Prediction of wound healing using Vaccum-assisted closure therapy after endovascular revascularization for critical limb ischemia

Tomoya Fukagawa, Yoshiaki Ito, Keisuke Hirano, Masahiro Yamawaki, Motoharu Araki, Norihiro Kobayashi, Yasunari Sakamoto, Shinsuke Mori, Masakazu Tsutsumi, Yohsuke Honda, Kenji Makino (Saiseikai yokohama-city eastern hospital)

What's known?

Vaccum-assisted closure (VAC) therapy improved wound healing. However, we sometimes experienced the wound treated with VAC therapy led to poor result.

What's new?

62 consecutive patients (65 limbs) affected by CLI of Rutherford 5 and 6 class, after endovascular revascularization, underwent VAC therapy in order to improve the wound healing between February 2008 and December 2017. Of these lesions, 43 limbs (66%) were achieved wound healing. In wound healing group, heel wound (12% vs. 41%; $P=0.01$) and wound grade ≥ 2 in Wifii classification (79% vs. 100%; $P<0.01$) were less common, toe wound (74% vs. 36%; $P<0.01$) and direct flow to wound (77% vs. 32%; $P<0.01$) were more common. Infectious wounds at initial diagnosis (79% vs. 86%, $P=0.46$) was no significant difference between two group. Multivariate Cox proportional hazard analysis identified heel wound (hazard ratio [HR], 0.3; $P=0.02$) and no blood flow to wound (hazard ratio [HR], 0.5; $P=0.04$) were predictors of wound unhealing. Consequently, Heel wound and no blood flow to wound were associated with wound unhealing underwent VAC therapy in CLI patients. There is no relationship between wound healing and infectious wounds at initial diagnosis.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-106] Impact of wound-free ambulation time after revascularization on patient prognosis in chronic limb-threatening ischemia

Shinsuke Kikuchi, Daiki Uchida, Naoya Kuriyama, Kazuki Takahashi, Hiroyuki Miyamoto, Keisuke Kamada, Ai Tochikubo, Atsuhiko Koya, Nobuyoshi Azuma (Department of Vascular Surgery, Asahikawa Medical University)

What's known?

Revascularization has not altered patient prognosis in chronic limb-threatening ischemia (CLTI). We still try searching factors related to improvement of patient prognosis; wound-free ambulation (WFA), a new endpoint, may give impact on patient's prognosis in CLTI.

What's new?

Based on clinical outcomes of 187 patients (225 limbs) underwent revascularization for CLTI between Jan

2012 to Dec 2017 in a single center (74% diabetes and 50% dialysis), WFA, which was defined as achievement of complete wound healing and ambulation after revascularization was assessed for patient's survival rate. Wifl clinical stage did not alter patient's survival rate in this series, however the new endpoint, WFA, clearly stratified patient's prognosis in CLTI; there was difference in 2-year survival rate between patients who achieved WFA and patients who did not (73% and 40%, $P < 0.01$). Although this endpoint was a comprehensive factor including multiple factors associated with patient's survival rate in CLTI, such as low nutrition, dialysis and non-ambulatory status, wound healing and ambulation seems to be important factors related to subsequent patient prognosis after revascularization. Here, we show impact of WFA in treatment and patient prognosis of CLTI.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-107] Prognostic Impact of Infrapopliteal Anatomic Severity on Delayed Wound Healing in Patients with Chronic Limb-threatening Ischemia in the Era of Global Limb Anatomic Staging System (GLASS)

Yosuke Hata¹, Osamu Iida¹, Shin Okamoto¹, Ishihara Takayuki¹, Kiyonori Nanto¹, Takuya Tsujimura¹, Shota Okuno¹, Mitsuyoshi Takahara², Toshiaki Mano¹ (1.Kansai Rosai Hospital Cardiovascular Center, 2.2)Department of Metabolic Medicine, Osaka University Graduate School of Medicine, 3.2)Department of Metabolic Medicine, Osaka University Graduate School of Medicine)

What's known?

Global Limb Anatomic Staging System (GLASS) proposed by Global vascular guideline can anatomically stratify infrapopliteal (IP) lesions in patients with chronic limb-threatening ischemia (CLTI). However, in the era of GLASS, whether anatomical severity of IP lesions impact on delayed wound healing (WH) in CLTI patients has not been studied.

What's new?

This study enrolled 639 CLTI patients with tissue loss primarily treated with endovascular therapy (EVT) for the IP lesions between April 2010 and December 2015. Arterial calcification was assessed by high intensity fluoroscopy and classified into 3 groups as follows; calcification grade (CG) 1: none, 2: unilateral and 3: bilateral calcification, while poor below-the-ankle (BTA) run-off was defined as no pedal arch with 0-1 vessel run-off within dorsal, lateral and medial planter artery. The primary outcome measure was WH. Anatomical predictors for delayed WH were evaluated by Cox proportional hazards regression analysis. After multivariate analysis, predictors for delayed WH were CG (hazard ratio (HR) 0.86 [95% confidential interval (CI) 0.74-0.99], $P=0.042$) and poor BTA run-off (HR 0.72 [95% CI 0.57-0.90]), whereas GLASS IP was not (HR 0.97 [95% CI 0.86-1.06]). The Kaplan-Meier analysis showed wound healing in subgroups of significant factors (see figure).

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-108] The association between Clinical Frailty and 3-year prognosis

in patients with claudication and critical limb ischemia: from I-PAD Registry

Tomoaki Mochidome¹, Takashi Miura¹, Tamon Kato², Yusuke Kanzaki³, Naoyuki Abe⁴, Daisuke Yokota⁵, Takashi Yanagisawa⁶, Daisuke Sunohara¹, Takahiro Kobayashi¹, Toshio Kasai¹, Uichi Ikeda¹ (1.Nagano Municipal Hospital, Department of Cardiology, 2.Shinshu University School of Medicine, Department of Cardiovascular Medicine, 3.Shinshu University School of Medicine, Department of Cardiovascular Medicine, 4.Nagano Red Cross Hospital, Department of Cardiology, 5.Iida Hospital, Department of Cardiology, 6.Saku Central Hospital Advanced Care Center, Department of Cardiology)

What's known?

Clinical frailty scale(CFS) is known the tool which evaluate the patients about health and functional evaluation. Moreover, it is said that CFS is associated with hospitalization period and short-term mortality. However, the association between CFS and long-term mortality on the patients with PAD are not well known. What's new?

I-PAD registry enrolled 371 consecutive PAD patients who were performed EVT and divided 324 patients who conducted follow up survey into the two groups; CLI group(n=110), claudication group(n=214). To assess the prognostic value of CFS, we categorized into further two groups according to CFS; CFS \geq 5 was Frail group, and CFS $<$ 5 was not frail group. The primary endpoint was 3-year MACE(all-cause mortality, MI and stroke) after EVT.

The 3-year MACE rate was remarkably higher in the frail group than in the not frail group among the patients with not only CLI, but also claudication(54.5% vs 36.9%, p=0.04, 38.5% vs 14.1%, p=0.008, respectively). Multivariate Cox analysis showed the CFS \geq 5 was strong predictor for 3-year MACE in both groups(HR2.09, 95%CI 1.11-3.95, p=0.02, and HR3.05; 95%CI: 1.30-6.83, p=0.03, respectively).

CFS \geq 5 was strongly associated with poor prognosis for 3-year after EVT in patients with CLI and claudication.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-109] Critical factors for limb salvage in patients with critical limb ischemia

Miki Fujii¹, Go Yoshioka¹, Tomoko Hayashi¹, Hiroto Terashi² (1.Department of Plastic and Reconstructive Surgery, Critical Limb Ischemia Center, Kitaharima medical center, 2.Department of Plastic and Reconstructive Surgery, Kobe University Hospital, 3.Department of Plastic and Reconstructive Surgery, Kobe University Hospital)

What's known?

Purpose: To determine the critical factors for limb salvage and wound healing in patients with critical limb ischemia (CLI).

Methods: We retrospectively investigated a consecutive series of 84 patients with foot ulcers treated by revascularization and wound treatment by our multidisciplinary team between October 2013 and February 2019.

What's new?

Results: The mean age of the patients was 72.2 \pm 12.1 years. 77.4% patients had diabetes, and 58.3% had end-stage renal disease. Out of 105 foot ulcers, 83 healed (42 required minor amputation), whereas 14 did not heal (13 required major amputation), and 8 patients died. The healing time of the ulcers was 76.6 \pm 72.4 days. A multivariate logistic regression analysis showed that CRP(p=0.01, 95%CI 0.663-0.942), steroid use(p=0.02, 95%CI 1.485-54.199), duration of antibiotic(p=0.03,95%CI 0.961-0.998), and vascular status

after revascularization($p=0.03$, 95%CI 0.031-0.84) were significantly associated with wound healing.

Conclusions: Patients with severely infected ulcers on admission and steroid users were more likely to have major amputations. Successful revascularization is important in wound healing, but the vascular status on admission is not associated with it. Wound management by wound specialists is key to successful wound healing in patients with CLI.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-110] 5 years clinical outcome of endovascular therapy for the critical limb ischemia

Yasuhiro Kaetsu, Hiroaki Nakamura, Syogo Yonehara, Yusuke Nakanishi, Hiroyuki Fujii, Yasushi Ichikawa, Masanaga Tsujimoto, Yuya Terao, Hajime Nakaoka, Makoto Kadotani, Yoshio Ohnishi (Kakogawa Central City Hospital, Cardiovascular Department)

What's known?

Endovascular therapy (EVT) have been developed, however patients with critical limb ischemia (CLI) have a poor prognosis. Long time clinical outcome is not still clear.

What's new?

The aim of our study was to evaluate 5 years clinical outcome after EVT for CLI from daily practice.

Methods: Between 2011 July and 2014 October, 76 patients with CLI were treated EVT. Indication of EVT was decided by consensus among vascular specialists (including vascular surgeons and intervention cardiologists). We investigated the occurrence of clinical events within 60 months after EVT, such as death, major and minor amputation, revascularization.

Results: Of these patients, mean age was 77 ± 10 years, 57.9% (44/76) was male. Hypertensive patients were 47 (61.8%), Dyslipidemia were 20 (26.3%). Diabetes were 39 (51.3%), prior and current smoker were 38 (50.0%) and Hemodialysis patients were 14 (18.4%). 38.2% (29/76) of all patients have ischemic heart disease. Rutherford class 4 was 19 patients, 5 was 48 patients and 6 was 4 patient. 60 months after EVT (follow up % was 77.6%), there were 42 deaths (71.2%, 12, 24, 36, 48 months mortality was 23.9%, 35.3%, 46.3%, 51.6%), 1 major amputation, 22 minor amputations, 7 bypass surgery. 22.4% of all patients were needed revascularizations. .

Conclusion: Although patient survival remains poor, the limb salvage rate after EVT for CLI was acceptable.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-111] The Impact of Antithrombotic Therapy on Clinical Outcomes After Endovascular Therapy for Below the Ankle Lesions in Patients with Critical Limb Ischemia

Masafumi Mizusawa, Keisuke Hirano, Kenji Makino, Yohsuke Honda, Masakazu Tsutsumi, Shinsuke Mori, Yasunari Sakamoto, Norihiro Kobayashi, Motoharu Araki, Masahiro Yamawaki, Yoshiaki Ito (Saiseikai Yokohama-city Eastern Hospital)

What's known?

It is known that patients with critical limb ischemia (CLI) showed very poor prognosis because they have many comorbidities. They often take antiplatelet and/or anticoagulant for cardiovascular disease including

valvular disease and atrial fibrillation, cerebrovascular disease and not to mention, peripheral artery disease. What's new?

Our retrospective study was conducted examining 275 patients undergoing endovascular therapy (EVT) for below the ankle lesions in CLI patients (Rutherford classification 5 or 6) between 2008 and 2016. We investigated actual medication status and clinical outcomes including wound healing, major amputation, major bleeding and death at 3 years after EVT. 98 patients (40%) underwent dual antiplatelet therapy (DAPT) and 36 patients (13%) took anticoagulant. In addition, 11 patients (4%) underwent antithrombotic therapy with antiplatelet and anticoagulant and 13 patients (4%) with DAPT and anticoagulant. There is no significant difference in rate of wound healing, major amputation and major bleeding depending on antithrombotic therapy. However, Kaplan-Meier analysis demonstrated that mortality rate at 3 years after EVT was significantly higher (63% vs. 46%, $p < 0.02$, log-rank) in patients taking anticoagulant. Especially, patients with both antiplatelet and anticoagulant showed significantly higher mortality rate (figure). CLI patients requiring anticoagulant showed poorer prognosis. We have to always consider whether antithrombotic therapy including anticoagulant is suitable for each CLI patient.

(2020年2月22日(土) 10:30 ~ 12:00 Hall L-2)

[MO-112] Pressure wire-guided endovascular therapy reduces the total dose of paclitaxel applied to patients with diffuse tandem lesion of the superficial femoral artery

Shigeyasu Tsuda¹, Shinichiro Yamada¹, Kohei Yamawaki¹, Naokazu Miyamoto², Kojiro Awano¹ (1. Department of cardiology, Kita-Harima Medical Center, 2. Department of radiology, Kita-Harima Medical Center, 3. Department of radiology, Kita-Harima Medical Center)

What's known?

Paclitaxel-coated balloon (PCB) angioplasty is an effective treatment associated with long-term durability of patency for superficial femoral artery disease. However, recent meta-analysis demonstrated the increased risk of mortality after PCB treatment. One of the suspicious mechanisms of increased mortality is much high dose of paclitaxel released during PCB treatment. Coronary physiology assessed by pressure wire (PW) can evaluate the significance of lesion stenosis, and as a result, it reduces the length of treated lesion and total dose of anti-proliferative drug delivered from DES or PCB in PCI.

What's new?

We hypothesized that PW-guided EVT would be superior to angiography (AG)-guided EVT in patients with SFA diffuse tandem lesion in evaluating functional ischemia and reducing the total dose of paclitaxel applied. Among 24 patients with angiographically diffuse tandem lesion of the SFA, 12 patients each were treated by PW-guided EVT and AG-guided EVT, respectively. There was no significant difference between the two groups in the pre-treatment ankle-brachial pressure index (0.61 vs. 0.57; $P = 0.569$). In the AG-guided EVT, PCB was used in the angiographically stenotic lesion after pre-dilatation. In the PW-guided EVT group, only the stenotic sites that had pressure gradients > 10 mmHg were treated with PCB after pre-dilatation. The amount of PCB was lower in the group treated with PW-EVT compared with the AG-EVT group (1 vs. 1.33; $P < 0.05$). The total length of the PCB was significantly lower in the PW-EVT group compared with the AG-EVT group (82.5 mm vs. 160 mm; $P < 0.05$). Furthermore, the total dose of paclitaxel applied was significantly lower in the PW group (4.6 mg vs. 8.8 mg; $P < 0.05$). Post-treatment ABI showed no significant difference between the two groups (0.99 vs. 0.96). In patients with diffuse tandem lesion of the SFA, PW-guided EVT can reduce the amount of balloon, the total length of balloon dilatation and a total dose of paclitaxel applied.

