IS-1-1　The current status of management of venous thromboembolism in cancer patients at preoperative state

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【Background】
Cancer-associated thrombosis (CAT) is a well-recognized concept in oncology. Venous thromboembolism (VTE) occurs more frequently in patients with cancer than in those without. However, no established guidelines exist for the preoperative management of VTE in cancer patients.
【Objectives and Methods】
We retrospectively reviewed 51 cases of VTE diagnosed by preoperative lower extremity venous echocardiography in patients with carcinoma from January 2023 to December 2024 at our hospital to clarify the current status of VTE practice.
【Results】
The study included 38 female patients (74.5%) with a mean age of 72.1 ± 11.2 years. The primary lesions were colorectal cancer in 18 cases (35.3%), gynecological cancer in 13 cases (25.5%), gastric cancer in 7 cases (13.7%), and other types of cancer in 13 cases (25.5%). Of these CAT patients, 5 cases (9.8%) were proximal deep vein thrombosis (DVT), 40 cases (78.4%) were isolated distal DVT, and 7 cases (13.7%) were pulmonary embolism (PE). 16 patients (31.3%) received preoperative treatment for VTE, including DOACs, heparin, warfarin, and inferior vena cava filter. No patients experienced new PE during the perioperative period. At the postoperative state, progression of thrombosis occurred in 7 cases (13.7%). During the observation period, no thrombosis related deaths were observed. Of the 40 cases of isolated distal DVT, 8 cases (20.0%) underwent preoperative treatment. Although 5 cases (12.5%) encountered worsening thrombus, proximal extension were not observed.
【Discussion and Conclusion】
In many cases of proximal DVT or PE, preoperative treatment for VTE was administered. In contrast, many cases of isolated distal DVT underwent cancer surgery without VTE treatment. The perioperative outcomes in patients with isolated DVT were relatively favorable. However, long-term anticoagulant therapy for isolated distal DVT has been reported to offer benefits in Japan. Further studies are needed to establish the optimal preoperative management strategy for VTE in cancer patients.

IS-1-2　Efficacy for endovascular laser ablation of side branch tributary varicose vein in recurrent cases

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BACKGROUND
Recurrence after varicose vein surgery can occur through residual tributaries. While phlebectomy or sclerotherapy is traditionally used, treatment becomes difficult when the affected area is extensive. At our institution, we have applied tributary ablation for such recurrences and report on its utility.
METHODS
We studied patients who experienced recurrence through residual tributaries after great saphenous vein (GSV) treatment, including stripping or endovenous therapy. Cases where the entire GSV remained post-high ligation were excluded. Because tributary ablation alone is not insured in Japan, it was performed only when part of the GSV remained, reflux was present in the accessory saphenous vein, or it was combined with treatment of the contralateral limb. Ablation was done under tumescent local anesthesia using 18G needles under ultrasound guidance, with a 2-ring fiber at reduced LEED.
RESULTS
From August 2021 to December 2024, 21 patients (25 limbs) underwent treatment. The mean age was 62.0 ± 9.5 years; 6 were men and 15 women. CEAP classifications were: C2 in 5 limbs, C3 in 9, C4 in 6, C5 in 1, and C6 in 4. Initial treatments included stripping (12 limbs), high ligation (1), endovenous ablation (11), and embolization (1). Recurrence occurred within 5 years in 10 limbs, 5–10 years in 4, and over 10 years in 11. The average number of ablation sites was 4.8 ± 3.8; incompetent perforator vein ablation was added in 7 limbs. Postoperative sclerotherapy was done in 11 limbs. All cases showed symptom improvement, with ulcer healing in all C6 cases.
DISCUSSION
Despite the complex nature of recurrence involving tributaries, tributary ablation is broadly applicable and may warrant expanded use.

IS-1-3 Treatment strategy for varicose veins- EVLA for full length of GSV and branching veins -

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Hiroshi Kawasaki, Kosuke Fujii, Naoki Haruta

<Background> We would report good results of EVLA for full length of GSV and branching veins for serious cases in short and middle term.
<Methods> 56 cases (22/34 in 2023/2024) of EVLA for full length of GSV and branching veins were performed for 12 months in 2023 and 2024.
Age: 48~87/24~83yrs, average 71/63yrs, Gender: Male 26 Female 30, Postoperative follow up periods: 12/6.2 months,
EVLA procedure: local anesthesia + TLA + venous anesthesia (Flunitrazepam), direct puncture under US guide,
ELVeS laser 1470 (bioLITEC), radialslim2ringfiber, Signal mode, Output 6 wats, Energy interval 70J (Thigh)/30J (lower leg)
SAPs: Subfascial PAPs (percutaneous ablation of perforators) Transluminal technique, short axis puncture, guide wire
operative time 63/63 min, total ablated sites (ablated branches) 6.1(3.7)/5.6(3.3)
ablated length of total GSV 62/66 cm, total energy 3164/3293 Jules, ablation time 514/526 sec, LEED 51/50 J/cm
<Results> pain (≧1M) 0, numbness 0,
sensory disturbance (discomfort): 1yr+ (total); 2 (3)/1 (3) :9%/3%
burn injury 0, pigmentation 0, lymphorrhoea 0
<Discussion> Improved points of procedure are suggested more importantly as follows,
A) Ablation for full length GSV, especially prevention of postoperative nerve injury;
1) Transluminal technique definitely with short-axis US guided puncture and well ablation
2) Keep distance GSV from peripheral nerves with lots of TLA
3) Ablation for lower leg GSV with low energy
B) Ablation for branching veins,
1) Transluminal technique definitely with short-axis guided puncture
2) Transfixing technique unnaturally is avoided due to painful punctures and poor results
3) Unnaturally compression of slim fiber inside branches is avoided due to damage and remains of tip of laser fiber.
<Conclusion> Effectiveness and safety of EVLA for full length of GSV and branching veins are proofed as a primary and radical treatment for serious varicose veins with short and middle term results due to improved surgical techniques.
SAPs are recommended for IPV strongly.

IS-1-4 Withdraw

IS-1-5　Early-term outcomes of patients with acute pulmonary thromboembolism who required PCPS: Efficacy of surgical thrombectomy for pulmonary embolism

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[Background]
Massive pulmonary thromboembolism (PTE) with cardiogenic shock has a high mortality rate. Percutaneous cardiopulmonary support (PCPS) is recommended in such cases, though outcomes remain poor. We evaluated early outcomes of acute PTE requiring PCPS or cardiopulmonary bypass (CPB).

[Methods]
From April 2019 to January 2025, 9 patients with acute PTE underwent PCPS and/or CPB. The mean age was 59 ± 11 years (range 43–77), and 7 were women (77.7%). Surgical pulmonary thrombectomy under CPB was performed with the heart beating. Following drainage of the superior and inferior vena cava and venting of the pulmonary artery, thrombi were removed from the left and right pulmonary arteries using hilar lymph node forceps.

[Results]
PCPS alone was used in 6 cases, CPB alone in 1, and both in 2. The median time to initiation of circulatory support was 2 hours; support lasted a median of 5 hours. Seven patients (77.7%) experienced cardiac arrest prior to support. Primary conditions included malignancy and postoperative status (2 each), and obesity, heart failure, chronic lung disease, cerebrovascular disease, and prolonged bed rest (1 each). Treatments included thrombolysis (2 cases), catheter-directed thrombus aspiration (4), and surgical thrombectomy (3). Five patients (55.5%) died during the acute phase. All patients undergoing surgical thrombectomy survived and were weaned from support intraoperatively. The rate of surgical thrombectomy was significantly higher in the survival group than in the non-survival group ($p = 0.047$).

[Conclusion]
In massive PTE with cardiogenic shock, initial stabilization with PCPS followed by surgical thrombectomy may improve early outcomes.

IS-1-6　What is the Appropriate Treatment of Patients with Superficial Venous Reflux and Deep Vein Obstruction?

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Misaki Kiguchi

The current evidence is limited on the preferred treatment algorithm in patients with superficial venous reflux and deep venous obstruction. Data suggests that ablation of superficial venous reflux is safe in patient with concurrent deep venous obstruction. Treatment should be based on symptoms, not the degree of disease. Elimination of the appropriate level of venous hypertension, whether through treatment of superficial venous reflux and/or deep venous obstruction, to a threshold where symptoms improve should be the goal, and treatment modality should be tailored to such.

International Session

IS-W-1 "Integral Travel Award 2024 Winner Presentation" A Study of optimal pressure for compression therapy of Klippel-Trenaunay syndrome

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[BACKGROUND]
Klippel-Trenaunay syndrome (KTS) is associated with complex venous and lymphatic reflux disorders, resulting in varicose veins and lymphedema of the lower extremities. The basic treatment is compression therapy using elastic stockings. However, the optimal compression pressure for compression therapy of the KTS limb is not clear. To investigate the effect of different compression pressures of elastic stockings on venous return, we performed Air plethysmography (APG) with elastic stockings.

[METHODS]
Patients diagnosed with KTS between January 2016 and December 2023 and who performed APG wearing 20 mmHg and 30 mmHg high sock-type elastic stockings on the affected limb were included. APG was performed in the following order: without elastic stockings, with 20 mmHg elastic stockings, and with 30 mmHg elastic stockings. Venous volume (VV)、venous filling index (VFI)、ejection fraction (EF)、Residual Volume Fraction (RVF) were statistically examined.

[RESULTS]
Twenty patients (14 males and 6 females) were measured, median age 32 years (13-59), and all affected limbs were unilateral. The median APG results when not wearing elastic stockings, 20 mmHg, and 30 mmHg were VV (241.8 ml, 177.9 ml, 189.0 ml), VFI (4.3 ml/sec, 2.9 ml/sec, 2.9 ml/sec), EF (39.5%, 42.6%, 42.2%), RVF (45.9%, 49.4%, 52.0%); VV and VFI were significantly different ($p<0.001$) between not worn and 20 mmHg and between worn and 30 mmHg.

[DISCUSSION]
Wearing elastic stockings significantly decreased VV and VFI, and EF showed a trend toward improvement. However, RVF tended to worsen, although not significantly, suggesting that the hemodynamics of deep veins may be different in KTS patients, and that wearing elastic stockings may impair venous return and worsen RVF in patients whose venous return is mainly to superficial veins. Wearing 20 mmHg elastic stockings on the KTS limb improved VV and VFI, but wearing 30 mmHg elastic stockings did not improve them further.

International Session

IS-W-2 “EVF Prize 2023 Winner Presentation” The DAVE Randomised Clinical Trial - Decellularised Dermis Allograft For The Treatment Of Chronic Venous Leg Ulceration

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Background/Aim:
Venous leg ulcers (VLUs) are a common condition affecting up to 1% of the population and 4% of the elderly. Despite standard of care, comprising of wound care, compression therapy, and superficial venous incompetence treatment, up to 30% of VLUs fail to heal after six months. Human decellularized dermis (DCD) allografts have been shown to improve healing rates of diabetic foot ulceration in randomised clinical trials. The DAVE trial aimed to determine if DCD allograft is an effective and safe treatment adjunct to improve VLU care.
Methods:
This was a multicentre, prospective, randomised, open-label, pragmatic trial in the United Kingdom (UK) which received approval from the UK National Research Ethics Service on 6th February 2019 (reference number: 19/LO/1271). Patients with a confirmed diagnosis of VLU in the lower limb were assessed and enrolled if they were adults (≥18 years or older) who were able to provide informed consent, venous incompetence on ultrasound, an ABPI ≥0.8 and an index VLU present for at least 3 months and ≥2cm^2 in size. Patients were randomised in a 1:1 fashion to either the intervention (DCD graft and standard of care) or control arm (standard of care alone). The primary outcome was the proportion with a healed index VLU at 12 weeks. Secondary outcomes included time to index VLU healing, the percentage change in index ulcer area at 12 weeks, the proportion with a healed index VLU at 12 months, the proportion for whom an ulcer recurred at within 12 months, and health-related quality of life (HRQoL) analysis.
Results:
71 participants (69.0% male, 68.0 ± 14.8 years) were recruited from 11 centres between October 2019 to October 2022. There were no significant differences in demographic and clinical characteristics between groups at baseline. Median index ulcer area at baseline was 9.0cm^2 (IQR 4.5 to 40). No significant differences in the primary outcome were observed between the intervention (5.7%, n=2) and standard care (15.2%, n=5) groups, with an odds ratio of 0.34 (95% confidence interval [CI], 0.03 to 2.31). There were no significant differences in any of the secondary outcome measures. There were 22 serious adverse events and five were attributed to the application of DCD. Early termination of the trial was advised after interim data analysis due to a significantly lower rate of reaching the primary outcome (11.3%).
Conclusions:
No differences in the primary outcome were observed between the intervention and control arms. The DAVE study has shown that DCD allograft does not seem to be an effective treatment adjunct in VLU care.

IS-2-1 Evaluation of the Efficacy of EpiFix for the Treatment of Lower Extremity Venous Stasis Ulcers

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Kazuhito Nagasaki

BACKGROUND

EpiFix®, a dehydrated human amnion/chorion membrane (dHACM) allograft, contains over 300 bioactive proteins including growth factors and cytokines that support wound healing. In a U.S. multicenter randomized controlled trial, EpiFix combined with compression therapy resulted in significantly higher healing rates for venous leg ulcers (VLUs) than compression alone (60% vs. 35% at 12 weeks)[1]. EpiFix became reimbursable in Japan in 2022. This study retrospectively assessed its clinical effectiveness for VLUs in a hospital-based setting.

METHODS

We reviewed 26 patients (27 VLUs) treated with EpiFix between February 2023 and November 2024. Standard wound care included debridement and moist dressings, with optional use of negative pressure wound therapy or topical agents. EpiFix was reapplied weekly as needed. We evaluated complete healing rate, time to healing, recurrence, and contributing factors in non-healed cases.

RESULTS

The overall healing rate was 81.5% (22/27 lesions). Among 22 lesions treated with skin grafting, 86.4% healed, with a median healing time of 37.5 days (range: 14–177). In the five lesions without grafting, the healing rate was 60.0%, with a median healing time of 106 days (range: 103–153). Recurrence-free survival was 95.2% (20/21 lesions), with a median follow-up of 213 days. Poor outcomes were associated with uncontrolled diabetes, impaired limb perfusion (low ABI/SPP), lower limb paralysis, or obesity.

DISCUSSION

These findings align with previous trials and support EpiFix as a valid treatment for VLUs. Combined use with skin grafting may accelerate healing. Careful patient selection remains essential, particularly in those with systemic or vascular comorbidities. Further studies are needed to evaluate long-term outcomes.

REFERENCES

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IS-2-2 Combined treatment using endovenous laser ablation and ultrasound-guided foam sclerotherapy for tortuous and dilated left lateral gastrocnemius vein

Pyun-hazi Vein Clinic, South Korea
Jong Yoon Park

BACKGROUND

The clinical importance and optimal management of chronic Gastrocnemius vein (GCV) incompetence have rarely been discussed. In case of an incompetent GCV with varicose degeneration, surgical management of intramuscular varicose vein may be challenging. In this case we treated varicose degeneration of the proximal and muscular parts of the left lateral GCV using concomitant endovenous laser ablation (EVLA) and ultrasound-guided foam sclerotherapy (UGFS).

METHODS

Direct intraluminal access was conducted using 18-gauge angio-catheter and a ball-tip laser catheter introduced to the first segment, and performed focal tumescent anesthesia in the perivenous tissues. The use of small amount tumescent liquid (20ml/cm) reinforces spasm of the vein and protects the perivenous tissues. Only two points of focal EVLA (12 mm, 15 mm in length) was conducted along the dilated first segment. Simultaneously we injected 1% sodium tetradecyl sulfate (STS) into the second segment anticipating the sclerosing agent reach the first segment without being diluted. Then, the distal third part of vertical intramuscular degeneration was punctured, and a diode laser catheter was introduced up to 7 cm in length. EVLA was conducted for the third segment, and concomitant UGFS was performed using 1% STS from distal small saphenous vein to intramuscular GCV.

RESULTS

After three months, we checked duplex ultrasound scan from popliteal junction to distal axial intramuscular part, and we could ascertain that whole lateral GCV was completely occluded. The patient did not report any symptoms, and the ankle dermatitis and discoloration were improving.

DISCUSSION

Combined treatment using endovenous laser ablation and ultrasound-guided foam sclerotherapy for tortuous and dilated left lateral gastrocnemius vein incorporating distal muscular trunk as well as proximal main trunk, showed acceptable early outcome. Longer-term follow-up is warranted to verify the benefits from this novel non-surgical approach for deep-seated vein abnormalities.

IS-2-3　Current Advances in Lymphology: A Scientific Review

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Luis René Arias Villarroel

This review examines the most recent progress in lymphology, with a focus on advancements in imaging techniques, the discovery of novel biomarkers, and cutting-edge therapies.

Recent innovations in imaging technologies, such as lymphangiography, Doppler ultrasound, and magnetic resonance lymphangiography (MRL), have dramatically enhanced the ability to detect, stage, and classify lymphatic pathologies. These advancements allow for more precise identification of lymphatic dysfunction, which is crucial for tailored treatment plans. Furthermore, the identification of specific biomarkers, such as VEGF-C and podoplanin, has improved diagnostic accuracy, offering deeper insights into disease mechanisms and providing potential targets for therapeutic intervention.

On the therapeutic front, innovations in compression therapy, microsurgical techniques, and regenerative medicine are transforming the management of lymphedema. Advances in compression garments, pneumatic compression devices, and manual lymphatic drainage have enhanced patient outcomes by reducing swelling and improving lymphatic flow. Additionally, microsurgical approaches, such as lymphaticovenular anastomosis (LVA) and vascularized lymph node transfer (VLNT), have shown promising results in restoring lymphatic function. Emerging regenerative therapies, including stem cell-based treatments and growth factor therapies, hold significant promise for addressing lymphatic insufficiency at the cellular level.

The integration of artificial intelligence (AI), nanomedicine, and gene therapy into lymphatic research offers novel approaches to diagnosis and treatment. AI-powered imaging analysis can automate the detection of lymphatic abnormalities, improving diagnostic efficiency and accuracy. Nanomedicine is enabling targeted drug delivery systems that can directly address lymphatic dysfunction at the molecular level. Meanwhile, gene therapy approaches, such as the delivery of VEGF-C and VEGF-D, have demonstrated potential in enhancing lymphangiogenesis and restoring lymphatic vessel function. In conclusion, by synthesizing the latest developments in diagnostic imaging, biomarker discovery, and innovative therapeutic strategies, this article provides an invaluable resource for vascular specialists and clinicians aiming to enhance patient care and contribute to the evolution of lymphatic medicine.

IS-2-4　New treatments of varicose veins through muscle regeneration of leg leg muscles (especially calf muscles) without removing vein

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Gi Ji Lee

The calf muscle pump is the driving force behind the increased return of venous blood from the lower extremities to the heart. This causes venous blood flow in both vertical and horizontal directions, resulting in ambulatory pressure gradients between the thigh and lower limb veins, and bidirectional flow in calf perforators. Ambulatory pressure gradient causes venous reflux in incomplete veins and reflux induces ambulatory venous hypertension in the lower extremities and feet. In calf perforators, bidirectional flow enables rapid pressure equalization between the deep and superficial veins of the lower extremities: the outward component of bidirectional flow (superficial veins) during calf muscle contraction is not pathological regurgitation, but physiological afferent flow through the great saphenous vein to the femoral vein. Calf perforators are channels that communicate between bipedal systems and make these into conjugated vessels: these are not involved in pathological hemodynamic situations and do not cause ambulatory venous hypertension. The actual reason for the recurrence has not yet been clarified. The pressure difference during calf pumping between the femoral vein and the saphenous remnant after the removal of saphenous reflux causes biophysical and biochemical events. This leads to a recurrence. Therefore, the removal of ventricular regurgitation eliminates hemodynamic obstacles, which at the same time creates a 'comeback' to the precondition of recurrence and the previous pathological situation: these series of events are hemodynamic paradoxes. So this review showed that regeneration of lower leg muscles (esp., calf muscles) & vein itself can be fundamentally improved by muscle regeneration with mitochondrial dynamics without removing varicose veins.

IS-2-5 Skills and efforts on cyanoacrylate closure for incompetent saphenous veins

Osaka Vein Clinic, Japan
Xiaoning Tong

Background
Cyanoacrylate closure (CAC) for saphenous veins is a relatively new modality, which was introduced to Japan as a treatment covered by national health insurance in 2019. We report some skills and efforts on CAC and early clinical results and patient satisfaction outcomes in our facility.
Methods
300 patients with incompetent saphenous veins were underwent CAC between January 2022 and October 2023. Skills and efforts included:1. Procedures on big branches, 2.With or without blue sheath, 3.Reducing the Stump length,4.Approach to incompetent perforators, 5.Retrograde approach for cases with Stasis dermatitis, 6.Cases with infection. Postoperative follow-up periods were 1,3,6,12 months. We report the early outcome and evaluations revised Venous Clinical Severity Scores (rVCSS), hypersensitivity reaction (HSR) and patient satisfaction.
Results
he patients` average age was 63.3 ± 14.5-year-old, including 113 male/187 females, 414 limbs, 436 saphenous veins, with 258 GSVs, 131 SSVs and 47 ASVs. The diameters were 5.8 ± 2.2mm, and HSR was found in 35 of 414 (8.5%) limbs, which occurred 8.2 ± 0.7 days after CAC. The tracking rate of follow-up was 96.0% (288/300), and mean tracking period was 391 ± 27 days.
Discussion
We did some skills and efforts on CAC. Patients are highly satisfied and report low postoperative pain, and thermal-associated complication was avoided. Early results are encouraging, but we await further prospective long-term follow-up from the study.

IS-2-6 Intravenous anesthesia with propofol during EVLA : my experience

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Wonsuk Chung

Background: As multiple needle punctures are needed to inject tumescent solution during Endovenous Laser Ablation (EVLA), patients experience pain and stress which may result in the elevation of blood pressure and/or pulse rate. Intravenous propofol anesthesia relieves the patients from the painful and stressful procedure. I investigated the effects of propofol on the patients' vital signs.
Method: Between January 2 and May 31, 2024 I measured the systolic blood pressure (SBP), diastolic blood pressure (DBP), and pulse rate (PR) of 122 EVLA cases. Tumescent solution was administered after propofol induced conscious sedation, then EVLA was performed. The measurements were assessed three times in each case: pre-EVLA before propofol injection, mid-EVLA 2 to 3 minutes into the procedure, and post-EVLA. Statistical analysis was performed using SPSS ver. 28.0.
Results: The average age of the 122 cases was 53.56 years. The average SBP, DBP, and PR before EVLA was 132.0 ± 16.5 mmHg, 80.6 ± 11.1mmHg, and 67.2 ± 10.6, respectively. The mean SBP, DBP, and PR during EVLA and post-EVLA were as follows: 98.7 ± 12.7mmHg, 59.7 ± 11.4mmHg, 66.0 ± 10.2 and 111.4 ± 16.5mmHg, 69.7 ± 13.3mmHg, 63.7 ± 10.4. Paired t-tests showed significantly lower SBP and DBP mid-EVLA compared to pre-sedation values (both $p<0.001$). SBP, DBP and PR were lower post-EVLA compared to pre-sedation (all $p<0.001$). Subgroup analysis of 45 hypertensive patients showed a bigger average decline in SBP and DBP pre to mid-EVLA than non-hypertensive patients. None of the patients had any severe complications. But BP and PR decreased too much in some cases.
Discussion: Using propofol-induced conscious sedation showed effective and tolerable reductions in blood pressure, and a stable pulse rate. This finding was more strongly observed in hypertensive patients. But careful observation is needed during the procedure.

IS-3-1　Introduction of Annals of Phlebology

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Su-Kyung Kwon

Annals of Phlebology (Ann Phlebology) is the official journal of the Korean Society for Phlebology (KSP). Ann Phlebology is published biannually, with issues released on the last day of June and December.

Ann Phlebology publishes a variety of content, including editorials, original articles, review articles, case reports, brief communications, commentaries or opinions, and letters to the editor, all focusing on key issues related to venous diseases.

Title Annals of Phlebology
Frequency Twice a year
Publisher Korean Society for Phlebology (KSP)
Language English
Electronic Links https://www.annphlebology.org/main.html
https://koreamed.org/volumes/286
Currently Indexed By KoreaMed, CrossRef

Invitation to Join as Editor or Reviewer

Annals of Phlebology has been making continuous efforts to enhance its academic standing and credibility. As a result, it was selected as a candidate journal for inclusion in the Korea Citation Index (KCI) by the National Research Foundation of Korea (www.nrf.re.kr), effective December 20, 2024.

We believe that your involvement as an editor or reviewer would be of great value to the advancement of our society and its journal. If you are interested in participating or have any questions, please feel free to contact us at the following address.

journal@annphlebology.org
Editor-in-Chief: Tae Sik Kim (kmdphd@gmail.com)

IS-3-2　Endovenous Procedures In Obese: How To Tackle Difficulties

National Institute of Cardiovascular Diseases, Bangladesh
Shantonu Kumar Ghosh

Endovascular procedures are more famous than open surgery now a days as ultimate treatment of varicose vein. Many factors which predispose to development of varicose vein should be corrected to get optimum outcome. Obesity is an important factor to be corrected before and after the procedure. Worse complications may arise in obese patient even after successful surgery, like recurrence, chronic venous ulcer, deformity etc. Open and endovascular procedures are also challenging in the obese patients. Multiple comorbid conditions may coexist in these group like diabetes, hypertension, thyroid disorders, IHD, poor lung compliance, sleep apnea. Preoperative workup is very important for them. Many challenges may arise during the procedure like difficulty in transport and transfer, induction and maintenance of anesthesia, positioning, procedural difficulties for muscle bulk. Management at post operative period is also crucial. Proper planning and arrangement to solve possible complications can only present a successful outcome of any skilled surgical team.

IS-3-3 Risk Factor Analysis for Recurrent Occlusion in Dialysis Access Patients

Jeju Soo CardioVascular Clinic, Republic of Korea
Kilsoo Yie, Bo-mi Kim, Jae-eun Choi, Eun-hyung Hong

Introduction:
Recurrent occlusion in dialysis access patients impacts quality of life and trust in healthcare. Identifying risk factors is crucial for improving vascular access outcomes. This retrospective study analyzed clinical and procedural factors influencing reocclusion risk.
Patients and Methods:
A retrospective review of 76 patients who underwent surgical intervention for recurrent dialysis access occlusion (January 2023–December 2024) was conducted. Recurrent occlusion was defined as reocclusion following prior interventions, including balloon angioplasty, thrombectomy, bypass surgery, or open angioplasty. Primary and secondary outcomes were risk factors for reocclusion and early reocclusion (≤7 days), respectively. Cox proportional hazard and multivariate analyses were performed.
Results:
Reocclusion occurred within 1–256 days (mean: 45.0 ± 60.3 days). Patients were 55.6% male, with a mean age of 68.2 ± 11.7 years. Access types included autogenous veins (17.3%), prosthetic grafts (75.3%), and composite grafts (7.4%). Prior interventions were hybrid (35.8%), endovenous (58%), and open surgery (6.2%). Significant risk factors for reocclusion were dialysis access occlusion requiring surgical intervention (p=0.009) and residual thrombus or vascular injury requiring postoperative anticoagulation (p=0.01). High-pressure PTA reduced early reocclusion risk (p=0.022), while postoperative anticoagulation was significantly associated with early reocclusion.
Conclusion:
Complete resolution of vascular lesions is key to preventing reocclusion, especially early reocclusion. Aggressive intraoperative management of stenosis and thrombus is necessary. Healthcare reimbursement policies may require modification to support optimal treatment and reduce reocclusion rates.

IS-3-4 Concomitant phlebectomy or not, a propensity score matching case-control study

Jeju Soo CardioVascular Clinic, Republic of Korea
Arom Shin, Kilsoo Yie

Background:
This study examines therapeutic strategies for C2 cases, focusing on the necessity of concomitant varix elimination during truncal vein ablation.

Patients and Methods:
A cohort of 714 limbs from 585 patients who underwent endovenous procedures (April 2021–February 2023) was retrospectively analyzed. Propensity score matching adjusted for varix burden, allocating 68 patients to the minimal (mini) phlebectomy group and 68 to the maximal (max) phlebectomy group.

Results:
The mean age was 53.32 ± 14.84 years, with 42.65% male patients. The max group underwent an average of 5.71 ± 2.25 phlebectomies, while the mini group had none. Preoperative CVD severity, symptoms, and CIVIQ-14 scores were comparable, though VCSS scores were higher in the max group.

During surgery, the max group had higher pain scores (4.50 ± 2.20 vs. 3.52 ± 2.04, $p < 0.015$) and longer procedures (32.31 ± 11.82 vs. 24.24 ± 8.23, $p < 0.001$). At three months, additional sclerotherapy was more frequent in the max group (1.47 ± 0.97 vs. 1.01 ± 0.92, $p = 0.003$). Both groups showed significant symptom improvement (mini: $p < 0.001$, max: $p < 0.001$). Patient satisfaction was similar ($p = 0.1926$). Postoperative complications, including infection (1.47% vs. 0.00%) and thrombophlebitis (2.94% vs. 0.00%, $p = 0.49$), were minimal, with no significant differences.

Conclusions:
Patient-reported satisfaction is a key measure in varicose vein surgery. CVD symptoms improved significantly regardless of phlebectomy extent during truncal vein ablation, with no impact on satisfaction at three months.

IS-3-5　Description of a clinical case of endovascular embolisation of a scalp arteriovenous malformation with transition to the dura mater

National Research Oncology Center, Kazakhstan
Azat Chinaliyev, Tokan Sultanaliyev, Mynzhylki Berdikhojayev, Didar Khassenov

Relevance Scalp arteriovenous malformations (AVMs), or cirsoid aneurysms, are rare lesions with congenital, traumatic, or post-infectious origins. They present with pulsatile masses, headaches, pain, epilepsy, tinnitus, or bleeding.
Objective To evaluate mid-term outcomes of endovascular transcatheter embolization for scalp AVM.
Methods: A 34-year-old male presented with frequent headaches and a pulsatile scalp formation in the right frontoparietal and occipital region that enlarged during physical activity, with difficult-to-control bleeding episodes. CT angiography confirmed an AVM extending to the dural membrane. Cerebral angiography showed high venous shunting. Endovascular embolization of feeding arteries was performed using Onyx 18 and 34. Post-procedure angiography confirmed preserved cerebral vessel patency.
Results Postoperatively, the patient experienced headaches controlled with analgesics. The scalp formation decreased by 70% in volume. A small 0.8 cm necrotic zone appeared in the frontal area on day 7, which resolved by day 21. At 3-month follow-up, no clinical evidence of AVM remained.
Conclusion Endovascular embolization of complex head AVMs is an effective, safe procedure with high clinical success and improved quality of life.

IS-3-6　Analysis of clinical experience of patients with lower extremity edema

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Patients with leg edema are often referred for vascular surgery. The additional role of vascular surgeons is to find the cause of leg swelling of unknown origin and provide an effective treatment. The most common cause of leg swelling in the elderly is venous insufficiency. The most common edema in women is idiopathic edema. Other common but lesser known causes of edema should also be known. Brief screening tests should be performed to rule out edema due to systemic disease. We investigated the medical records of patients who visited the hospital with lower extremity edema to confirm and report the clinical features and treatment progress. A total of 78 patients with lower extremity edema of unknown origin referred to the department of vascular surgery for 6 months, and their clinical features were analyzed and reported. I hope it will be helpful when treating patients with edema of the lower extremities of unknown cause.

IS-4-1 Thermal ablation of varicose veins in Egypt- 20 years' experience

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Introduction: Varicose veins of the lower extremities are a common ailment in humans; at least 25% of women and 15% of men suffer from this disease. Endovenous thermal ablation (EVTA) is recognized as the first line treatment for incompetent truncal veins in the legs, causing varicose veins or other symptoms or signs of lower limb venous disease. EVTA can also be used for the treatment of incompetent perforating veins (IPVs), although the treatment of these veins is controversial.

Objective: In our study, we primarily aimed to establish a clinically and easily applicable technique of varicose veins ablation in Egypt. Our secondary endpoint was to evaluate effectiveness of the different thermal modalities of the treatment of GSV varicose veins.

Patients & Methods: Retrospective study of More than 1800 patients (2150 limbs) admitted to vascular surgery department in Emory University, Alexandria Armed Forces Hospital, and Royal Vascular Center, Alexandria- Egypt; from April 2005- March 2025, with primary varicose veins. Endovenous laser ablation, Radiofrequency and Microwave ablation were used in these patients in different centers.

Results: 1355 patients (75%) were treated by laser ablation, 365 patients (20%) were treated with Radiofrequency, and 80 patient were treated with Microwave ablation. 1, 3, and 5 years follow up was evaluated in the different modalities of thermal ablation of varicose veins patients. Risk assessment and Venous thrombo prophylaxis was done in 1250 patients (69.5%) and VTE episodes was detected in 12 patients (1.1%) along the follow up period.

Conclusion: Thermal ablation of varicose veins is a safe and applicable procedure, and significant results was achieved through laser ablation. Although thermal ablation is a safe procedure VTE Risk assessment and thrombo prophylaxis advised.

IS-4-2 Efforts of Standardizing Varicose Vein Diagnosis in Korea: Challenges and the Leadership of the Korean Society for Phlebology

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Introduction

Varicose veins are a commonly diagnosed condition, with a wide array of treatments employed for symptom relief, cosmetic improvement, and complication prevention. Recently, the number of diagnoses and treatments has surged due to the simplicity of procedures. However, this trend has led to issues of overtreatment and inappropriate care, emerging as a significant societal problem. In Korea, the emergence of pseudomedical group related to venous diseases has further fueled indiscriminate diagnoses and unnecessary procedures in some medical clinics.

Background and Issues of Inappropriate treatment

The rapid increase in the diagnosis and treatment of varicose veins has led to a heavier societal cost burden. In some clinics, vascular ultrasound has been overused without proper diagnosis, and endovenous treatments have been recommended even in cases without venous reflux. Some practitioners have only completed short-term training or have not received relevant education at all, leading to a serious lack of expertise among those involved in varicose vein treatment. Consequently, patients have faced high medical costs and suffered physical and psychological harm from unnecessary surgeries or procedures.

Although vascular ultrasound is central to diagnosing varicose veins, the results can vary significantly depending on the examiner's proficiency and subjective interpretation. There have been cases where all leg veins were wrongly diagnosed with reflux or treatment was recommended based on nonspecific leg pain, undermining trust between patients and healthcare providers and eroding confidence in the healthcare system as a whole.

Joint Standardization Efforts by Academic Societies

To address these issues, six relevant academic societies—The Korean Society for Phlebology, The Korean Society for Vascular Surgery, The Korean Society for Thoracic & Cardiovascular Surgery, The Korean Surgical Society, The Korean Surgical Ultrasound Society, and The Korean Society of Interventional Radiology—have collaborated. In November 2023, these societies jointly published a guideline booklet for ultrasound diagnosis of varicose veins. This guide aims to standardize and improve diagnostic accuracy and is regarded as a crucial milestone for evidence-based patient care.

Standardizing ultrasound diagnosis is the first step in proper varicose vein treatment. Vascular ultrasound is safe for patients and is optimal for assessing vascular structure, blood flow velocity, and direction. However, because results may vary with examiner technique and approach, a standardized method and diagnostic criteria are essential. The guideline provides clear principles for proper ultrasound examinations and specific diagnostic methods for varicose veins.

Changes After the Introduction of the Standardized Ultrasound Protocol

Following the adoption of the standardized ultrasound protocol, there has been a noticeable reduction in inappropriate treatment in Korean clinical settings. By clearly outlining the minimum requirements for diagnosis, interpretation criteria, and treatment indications based on diagnosis, the guideline has effectively curbed unnecessary ultrasound exams and indiscriminate treatment recommendations.

Importantly, the standardized approach ensures a consistent level of diagnostic accuracy regardless of the examiner's proficiency, offering a reliable standard for both patients and healthcare professionals. Reports suggest that unregulated endovenous treatments and procedures for clinically insignificant venous reflux have significantly declined since the implementation of the protocol.

Principles of Diagnosis and Clinical Relevance

The foundation of varicose vein diagnosis lies in venous ultrasound, which offers objective information such as imaging, presence and extent of reflux, and vein diameter. To ensure diagnostic reliability, adherence to a standardized protocol is essential. The Korean Society for Phlebology has adopted the principle that "in patients without symptoms or without confirmed great or small saphenous vein reflux, invasive treatments (such as vein stripping or endovenous occlusion) should not be recommended as first-line therapy." This reflects the Hippocratic oath—"Do no harm"—and cautions against applying the same treatment to all patients with varicose veins.

Patient-Centered Accurate Diagnosis and Treatment

Varicose veins are common but are susceptible to overtreatment and inappropriate procedures during diagnosis and treatment. The introduction of the ultrasound standard has significantly improved diagnostic reliability and reduced overtreatment, creating a more trustworthy clinical environment for both patients and practitioners. Moving forward, The six related academic societies plan to continue collaborating to develop comprehensive "varicose vein clinical guidelines" that cover not only ultrasound diagnosis but also various treatments and patient management in Korea.

Conclusion

The problem of inappropriate treatment in varicose vein care stemmed largely from the absence of standardized diagnostic criteria and reliance on subjective examiner judgment. The ultrasound protocol jointly developed by six academic societies has substantially improved the reliability and safety of varicose vein care in Korea and has effectively curbed overtreatment. While strengthening these standards may temporarily burden medical professionals, in the long run, it is expected to protect patients, promote efficient use of medical resources, and establish medical ethics. The relevant societies will continue to develop guidelines and provide education to ensure that varicose vein patients receive accurate diagnoses and appropriate treatment. These changes will not only benefit Korea but also serve as important lessons for improving the quality of varicose vein diagnosis and treatment and realizing patient-centered care worldwide.

IS-4-3　Practical Cohort Evaluation for Impact of Immobilization on Deep Vein Thrombosis Occurrence

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<Background>

Though immobilization and/or a long bedridden state could be one of risk factors with regard to deep vein thrombosis (DVT) according to the guideline, it may have been nearly impossible to survey and analyze that, partly because DVT shall multi-factorially be induced and some of those factors would mutually influence.

<Methods>

The present study was designed to reconfirm the risk factor, and evaluate the prevalence and indicators of DVT in psychiatric inpatients kept in isolation more than 7 days. In 39 consecutive patients admitted in one institute in 2019 (before the COVID-19 had strongly exerted an influence on most hospitals), the D-dimer level, gender, age, and so on, were studied in relation to the prevalence of DVT assessed using ultrasonography.

<Results>

Eight cases with DVT (20.5%) were identified. No factors except age (R=.331, p=.019) were associated with the presence of DVT. No cases were concerned with other general risk factors such as pregnancy, malignant diseases, presence of central venous catheter placement, and etc.

<Discussion>

In conclusion, the prevalence of DVT in psychiatric inpatients kept in isolation was high and substantially higher in elderly patients. Demonstrably, immobilization due to keeping in isolation may augment DVT occurrence.

IS-4-4 Venous Thrombectomy Using the Penumbra Indigo CAT 8 System: Post-Marketing Surveillance Results in Japan

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Background: The Penumbra Indigo CAT 8 system (CAT8) was approved in Japan in 2023 for the treatment of deep vein thrombosis (DVT). According to the appropriate use criteria, CAT8 is indicated for: (1) DVT involving iliac vein occlusion with severe continuous pain or discomfort despite adequate anticoagulation, leg elevation, or compression therapy. (defined as rVCSS pain score of 3, or a score of 2 with a Villalta score ≥ 15). (2) Acute DVT within 1 week of onset, with patent inflow veins (popliteal or calf veins), unilateral involvement, and thrombus not extending more than 1 cm into the inferior vena cava (IVC).
Methods: We retrospectively analyzed patients who underwent CAT8 thrombectomy for acute DVT between December 2023 and November 2024.
Results: A total of 12 procedures were performed in 11 patients. Adjunctive venous stenting was used in 4 procedures and catheter-directed thrombolysis (CDT) in 1 procedure. Venous stenosis rates after intervention were as follows: 0% in 3 procedures, 25% in 4, 50% in 4, and 95% in 1. Effective recanalization (≥50% patency) was achieved in 10 patients (11 procedures). The case with 95% residual stenosis lacked preparation for stenting: however, a second procedure involving stent placement and CDT successfully improved patency to ≥ 50%. No major complications occurred. At 1 month, venous patency was maintained in 10 of 11 cases. One case was suspected of post-procedural occlusion due to residual 50% iliac vein stenosis from compression; stenting was not performed due to the patient's young age, yet symptoms improved.
Conclusion: Initial outcomes of CAT8 thrombectomy for appropriately selected cases of acute DVT were favorable.

IS-4-5 The anatomy of deep and superficial collecting lymph vessels in upper/lower extremity and changing of them in lymphedema progression

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【Background】Although it is widely recognized that deep and superficial lymphatic vessels are connected in the intact upper and lower limbs, and lymphedema affects this connection, the details are poorly understood. The authors investigated the relationship between deep and superficial lymphatic vessels in the non-lymphedema and lymphedema limbs with several examinations.
【Methods】Upper extremity lymphedema (UEL) patients who underwent indocyanine green (ICG) lymphography were reviewed. Enhancement of the SCLN was evaluated at a plateau phase on ICG lymphography as well as the distal lymphography findings. Pathophysiological severity was evaluated according to ICG lymphography stage. Positive rates of the SCLN enhancement and enhanced flows into the SCLN were evaluated according to ICG lymphography stage. Moreover, Single Photon Emission Computed Tomography-Computed Tomography (SPECT-CT) was performed on the non-lymphedema lower extremity (defined by ICG stage 0) and the lymphedema lower extremity (defined by ICG stage I-V). The enhancement rates in deep lymphatics and their relationship to lymphedema were investigated.
【Results】Seventy-nine upper extremities were included in the study, and the positive rates of SCLN enhancement in ICG stage 0/I/II/III/IV was 46.9/80.0/100/72.7/37.5%, respectively, showing a significant difference (P=0.043). The positive rate of the enhanced pathway into the SCLN was 13.0/0/83.3/25.0/0%, respectively, also showing a significant difference (P=0.0032). On the other hand, twenty-four lower extremities were included in the study, and the enhancement rate of deep lymphatics in the early phase was 33.3/42.9% in the non-lymphedema/lymphedema limbs, respectively, which was not significantly different (P=0.83).
【Conclusions】The enhancement of SCLN and deltopectoral superficial lymphatic pathway into SCLN was frequently seen in ICG stage II UEL cases, indicating the importance of the collateral lymphatic pathway preventing UEL progression. In the lower extremities, the connection between deep and superficial collecting lymphatic vessels does not affect lymphedema and its progression.

IS-4-6　Chronic Venous Insufficiency as an Independent Risk Factor for Coronary Artery Disease: Evidence from Coronary Artery Calcium Score Analysis

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Background:
Previous studies have suggested a correlation between chronic venous insufficiency (CVI) and cardiovascular disease. However, whether CVI independently contributes to coronary artery disease (CAD) remains unclear. This study aimed to evaluate this relationship using coronary artery calcium score (CACS) assessment.
Methods:
A retrospective cohort study was conducted (IRB 2024012). From February to July 2023, CVI patients aged 50–89 underwent simultaneous non-contrast lower limb venous CT and CACS. Patients with a history of heart failure, post-thrombotic syndrome, PCI, cardiac ablation, cardiac surgery, peripheral arterial disease, or renal failure were excluded. Age- and sex-matched patients (n=234) who underwent cardiac ablation between April 2020 and December 2023 served as the control group. Clinical parameters and CACS were compared using univariate and multivariate analyses.
Results:
CVI and control groups each included 234 patients (mean age 71 ± 9 years, NS; females 154 vs. 145, NS). CVI patients had higher BMI (23.6 ± 3.9 vs. 22.6 ± 3.5, p=0.004), more dyslipidemia (100 vs. 66, p=0.001), and lower creatinine (0.76 ± 0.25 vs. 0.87 ± 0.64, p=0.02). Mean CACS was significantly higher in the CVI group (214 ± 578 vs. 64.8 ± 233, p<0.001); median values were 14.8 (IQR 0–178) vs. 0 (IQR 0–16), respectively. A CACS >100 was observed in 35% of CVI patients vs. 12% in controls (p<0.001). Univariate analysis identified CVI as a significant factor (β =149, 95% CI: 69.4–229, p<0.001). Multivariate analysis confirmed CVI (β =143.6, 95% CI: 63.7–223, p<0.001), age (β =7.1, p=0.002), hypertension (β =86.5, p=0.046), and dyslipidemia (β =87.5, p=0.047) as independent predictors of higher CACS.
Conclusions:
CVI is an independent risk factor for coronary artery disease, even after adjusting for age, hypertension, and dyslipidemia. Early cardiovascular risk screening may be warranted in CVI patients.

IS-P1-1 Five year results of radiofrequency ablation for unilateral great saphenous vein insufficiency and hemodynamic change of contralateral leg

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Background: Radiofrequency ablation (RFA) is a treatment for chronic venous disease, yet its long-term efficacy, particularly beyond five years, remains under-researched. Furthermore, the development of venous reflux in the contralateral leg among patients with unilateral venous disease is poorly understood. This study aims to evaluate the long-term outcomes of RFA in patients with unilateral venous disease and to assess the incidence of venous reflux in the contralateral leg.
Methods: A prospective observational study was conducted on patients treated with RFA for unilateral venous disease at Seoul National University Boramae Medical Center. Primary outcomes are vein occlusion rate in the treated limb and de novo reflux in the contralateral limb five years after treatment. Secondary outcomes included clinical evaluations through the Venous Clinical Severity Score (VCSS), Aberdeen Varicose Vein Questionnaire (AVVQ) Scores.
Results: The study included 70 patients with a mean age of 52.7 ± 9.8 years, of whom 62.9% were female. Vein occlusion rates in the treated limb reached 97.1% at five years, with a significant decrease in VCSS and AVVQ scores from preoperative levels by 2.2 ± 1.2 and 8.0 ± 7.9, respectively. A reduction in CEAP classification was also observed (C2: 94.3% before surgery, shifted to C0: 58.6%, C1: 32.9%, and C2: 8.6% after 5 years). The contralateral limb showed a 14.1% occurrence rate of de novo reflux, with the deep vein being the most common (54%) site, followed by the great saphenous vein (33%) and small saphenous vein (11%).
Conclusion: RFA presents an effective long-term treatment for chronic venous disease, demonstrating high vein occlusion rates and significant improvements in clinical severity and quality of life. The occurrence of new reflux in the opposite limb is substantial, indicating the need for surveillance of contralateral venous reflux.

IS-P1-2 A review of 27 cases of pulmonary thromboembolism in our hospital

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Background:
Despite advances in pulmonary thromboembolism (PE) diagnosis, severe PE remains a life-threatening condition. D-dimer is a sensitive marker for PE, but its low specificity limits the utility as a standalone diagnostic tool.
Methods:
We retrospectively reviewed 27 patients of PE diagnosed between January 2023 and December 2024 to exam the clinical courses, thrombotic risk factors, coexistence of deep vein thrombosis (DVT), D-dimer level, and outcomes.
Results:
The median age was 76 years (range: 35–92 years). Eight patients were male. The median BMI was 23.5. Twenty-two patients have symptoms such as leg pain or dyspnea. In severity of PE, 6 patients were massive, 13 patients were submassive, and 8 patients were non-massive. Some risk factors for thrombosis were detected, such as reduced mobility (n=5), malignancy (n=3), using oral contraceptive (n=1), pregnancy (n=1), and COVID-19 infection (n=2). Three patients died. The median D-dimer level was 6.55 μg/dL (range: 1.7–76.1 μg/dL). Eight patients had the D-dimer levels of 5 μg/dL or lower. There was no significant association between D-dimer level and severity. D-dimer level was significantly higher in cases with proximal DVT than with distal DVT (12.2 vs. 5.7 μg/dL, $p<0.01$).
Discussion:
Elevated D-dimer level is useful for suspecting PE, especially with proximal DVT, but some severe PE cases have low D-dimer level. Combining D-dimer with other coagulation markers such as thrombin-antithrombin complex (TAT) may improve diagnostic specificity. When PE is suspected clinically, we should perform contrast-enhanced CT or venous ultrasound regardless of D-dimer levels to treat PE as soon as possible.

IS-P1-3 Retrospective analysis of additional treatments for recurrent varicose veins following Endovenous Laser Ablation

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【Background】
EVLA and endovenous embolization have been actively performed at many institutions. Although recanalization is rare, recurrence from branches of the great saphenous vein (GSV) or incompetent perforator veins (IPVs) is occasionally observed in the long term.

【Subjects】
We retrospectively analyzed 6 patients (9 limbs) who experienced recurrence in the ipsilateral limb after EVLA and underwent reoperation, out of 146 patients treated at our department between January 2023 and December 2024. The cohort included 96 EVLA cases, 36 endovenous embolization cases, and 23 high ligation cases.

【Results】
The average age was 66.1 years with 3 males and 3 females. Preoperative clinical classifications were: C2 in 2 limbs, C4a in 3 limbs, and C6a in 3 limbs. Recurrent sites included the accesory saphenous vein (ASV) in 3 cases (4 limbs) and the IPVs in 5 cases (7 limbs), specifically involving the Dodd (1 limb), Boyd (4 limbs), and Cockett (4 limbs) systems (some limbs had overlapping involvement). All initial procedures involved GSV EVLA (average LEED: 88.2 J/cm), with an average treated length of 34.7 cm. The mean interval between the initial surgery and reoperation was 52.1 months. Additional treatments performed were: IPV PAPs in 4 cases (6 limbs), ASV EVLA in 3 cases (3 limbs), GSV EVLA in 2 cases (2 limbs), SSV EVLA in 1 limb, and IPV ligation + varicectomy in 1 case. No recurrences have been observed to date, and all ulcerated cases achieved complete healing postoperatively.

【Conclusion】
Although endovenous treatment has become the first-line therapy at many facilities, it is suggested that the initial interventions should also target ASVs and IPVs, particularly in patients with advanced venous disease classified as C4a or higher.

IS-P1-4 Adverse reactions to Endovascular Treatment for Varicose Veins - Cyanoacrylate closure V.S. Thermal ablation

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Background：Cyanoaclylate closure (CAC), which injects a foreign body into the vein, is controversial. It is known that Hypersensitivity reaction (HSR) after CAC. The definition of HSR has not been established, and the incidence rate is about 2-25%, with reports differing depending on the facility. To explore the characteristics of CAC, we compared the postoperative side effects we experienced in CAC and thermal ablation (TA). We reconstructed what we presented at the American Venous Forum 2025, VILLAVICENCIO.

Methods：We recruited 511 cases in which surgery was performed on incompetent great and small saphenous veins at our clinic. 300 cases of CAC performed from September 2020 to April 2023 and 211 cases of TA performed from June 2023 to July 2024. We retrospectively analyzed the skin symptoms and subjective symptoms (pain, nerve damage, and discomfort lasting for more than one month) from the medical records.

Results: The incidence of skin symptoms requiring treatment was 11% (32/300) for CAC and 4% (8/211) for TA. The main skin side effects in both groups were redness, swelling, itching, and pain. Indurated erythema obsereved in 7.3% (22 cases) of CAC and 2% (4 cases) of TA. The characteristic skin symptoms of CAC are urticaria and foreign body granuloma on puncture site. No serious adverse event occurred in either group.

Discussion: The incidence of skin symptoms was significantly higher with CAC compared to TA. We predicted that they are related to multiple factors, such as allergies, thrombotic reactions, and toxic effects of decomposition products since HSR includes various symptoms on skin and inside vein. Although there are many unknowns about the intravascular reaction caused by CAC, non-invasive, semi-liquid glue treatment may be suitable for vascular lesions in the lower leg with a complex course and concerns about nerve damage.

IS-P1-5 A Case in Which Ultrasound Examination Was Useful in Identifying the Cause of Significant Bilateral Lower Limb Edema

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Introduction

Lower extremity edema can result from a variety of causes. However, when standard diagnostic tests fail to reveal any significant findings, the condition is often classified as idiopathic lymphedema.

At our institution, we use ultrasonography (US) to assess subcutaneous tissue in edematous limbs and identify findings suggestive of lymphedema.

Here, we report a case of severe bilateral lower limb edema in an elderly patient, in which US played a key role in identifying the underlying etiology.

Case Presentation

A woman in her 70s developed bilateral lower limb edema around 2021.

Retroperitoneal fibrosis was initially suspected at another hospital, but lymphoscintigraphy led to a diagnosis of idiopathic lymphedema, and she was referred to our institution.

Physical examination revealed severe edema with skin thickening extending from the lower abdomen to both legs.

Ultrasonography of the lower extremities revealed dermal thickening and subcutaneous changes, including the characteristic cobblestone appearance seen in lymphedema, along with layered fluid accumulation.

Additionally, compression of the left common iliac vein was observed.

Suspecting venous congestion, contrast-enhanced CT was performed, revealing Nutcracker syndrome and bilateral ovarian vein dilation.

Although the cause of right ovarian vein dilation remains under investigation, the patient was diagnosed with venous lymphedema secondary to chronic venous insufficiency.

Compression therapy was initiated using medium-pressure, long-stocking-type elastic garments.

After three months of treatment, ultrasonography showed increased subcutaneous tissue thickness in both inguinal regions, but approximately 30% reduction in edema in both thighs and lower legs, indicating a favorable response to compression therapy.

Discussion

Venous lymphedema is often difficult to diagnose, as many patients present only after marked skin thickening and significant limb circumference enlargement have developed.

In this case, although there was considerable subcutaneous fluid and swelling, the detection of a layered fluid accumulation—uncommon in lymphedema—on ultrasound prompted additional imaging, which ultimately led to an accurate diagnosis.

Conclusion

Focusing on specific etiologies, ultrasonographic assessment of the skin and subcutaneous tissue can be useful in the differential diagnosis of lower extremity edema.

IS-P2-1 Clinical Study on Reoperation for Recurrence After 980-nm Endovenous Laser Ablation (EVLA) of Varicose Veins

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Objective: To investigate the clinical characteristics, causes of recurrence, treatment approaches, and outcomes of patients undergoing reoperation for recurrence after 980-nm EVLA for varicose veins.
Methods: Between May 2019 and August 2024, 12 patients (15 limbs) who underwent reoperation for recurrence following 980-nm EVLA were retrospectively analyzed. Clinical features, causes of recurrence, pathophysiology, surgical findings, and outcomes were evaluated based on medical records and duplex ultrasound findings. The revised Venous Clinical Severity Score (rVCSS) was compared preoperatively and at 1 and 6 months postoperatively.
Results: The cohort comprised 6 males and 6 females, with a mean age of 69.0 years. At the time of recurrence, the CEAP clinical classification was as follows: C2 (3 limbs), C3 (3 limbs), C4a (2 limbs), C4b (6 limbs), C4c (4 limbs), and C5 (1 limb). The initial treatment vessels were the great saphenous vein (GSV) in 13 limbs, small saphenous vein (SSV) in 1 limb, and accessory saphenous vein (ASV) in 1 limb. The mean interval between the initial and reoperative procedures was 95.0 ± 19.4 months. Recurrence patterns included GSV treatment followed by ASV insufficiency in 11 limbs, SSV treatment followed by GSV insufficiency in 1 limb, GSV treatment followed by recanalization in 2 limbs, and ASV treatment followed by GSV insufficiency in 1 limb. Reoperations involved 12 limbs with 1470-nm EVLA, 3 limbs with radiofrequency ablation, and foam sclerotherapy for all cases of concomitant side branch varicosities (10 under fluoroscopy and 5 under ultrasound guidance). Preoperative rVCSS was 7.9 ± 3.0, which improved to 2.1 ± 2.3 at 1 month and 1.4 ± 2.2 at 6 months postoperatively, with significant improvement observed.
Conclusion: The primary cause of recurrence after 980-nm EVLA was found to be ASV insufficiency following GSV treatment. Reoperation, combining endovenous thermal ablation and sclerotherapy, was effective in all cases, leading to significant improvement in both subjective and objective symptoms.

IS-P2-2 Leiomyosarcoma of deep femoral vein initially presenting as chronic deep vein thrombosis: A case report

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Leiomyosarcoma (LMS) is a rare and aggressive smooth muscle tumor, and venous leiomyosarcoma (VLMS) is an uncommon subtype, with majority of the cases involving the vena cava. We report a case of a 56-year-old patient initially diagnosed as deep vein thrombosis (DVT) in the common femoral vein who was later diagnosed with primary VLMS originating from the deep femoral vein. Despite anticoagulation therapy, leg edema persisted and imaging studies revealed an intraluminal mass with increased extent and size. A comprehensive diagnostic approach, including duplex ultrasound, contrast-enhanced computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography-computed tomography (PET-CT), led to the diagnosis of venous LMS originating from the deep femoral vein. Surgical resection of the mass was performed, followed by reconstruction of the femoral vein using an expanded polytetrafluoroethylene (ePTFE) graft. Histopathologic examination confirmed the diagnosis of LMS. The patient had an uneventful postoperative recovery and was referred for adjuvant therapy, including chemotherapy and radiotherapy. This case highlights the importance of a multimodal diagnostic approach in differentiating neoplasms from blood clots and underscores the need for a high level of suspicion when DVT presents with atypical features. Early diagnosis and wide surgical excision with negative margins are essential for successful management of VLMS.

IS-P2-3 Surgical resection of renal cell carcinoma with inferior vena cava tumor thrombus

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Background) In some malignant tumors that have invaded the inferior vena cava (IVC), there are cases where a beneficial effect can be expected by resecting the IVC together with the resection of the primary tumor. I would like to report my recent experience of successfully performed nephrectomy and segmental resection of the IVC with reconstruction in a patient with renal tumor invading the IVC.
Case Report) A 65 years old female patient presented with gross hematuria, and cystoscopy revealed hematuria from right ureteral orifice. Imaging showed a right renal mass and a tumor thrombus extending into the IVC through the renal vein. The tumor thrombus that invaded the IVC was blocking the IVC lumen, and left renal drainage through the left renal vein was maintained. The surgery first performed perirenal dissection for right nephrectomy, then dissected the area around the IVC to control the suprarenal and infrarenal IVC and the left renal vein. After opening the IVC and evaluating it, the tumor extensively invaded the IVC wall, therefore segmental resection of the IVC was performed and reconstruction was performed using a Dacron graft. The patient was discharged one week after surgery without any complications.
Conclusion) In some cases of renal cell carcinoma, where the tumor invades the IVC, surgical resection of the IVC and reconstruction with a graft is a feasible treatment option.

IS-P2-4 Proximal great saphenous vein sparing surgery for varicose veins originate from Dodd perforator

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INTRODUCTION: There are cases of varicose veins which reflux originate from Dodd perforator, with reflux of distal great saphenous vein (GSV) but without reflux of the proximal GSV and the sapheno-femoral junction. We report the results of "proximal GSV sparing surgery for Dodd perforator varicose veins", in other word endovenous ablation of the confluence of the Dodd perforator and the distal GSV with reflux preserving the proximal GSV without reflux.
METHODS: Between 2013 and 2023, we operated on 1661 patients 1790 limbs with varicose veins. Two patients two limbs with recurrent varicose veins from the Dodd perforating veins were excluded from the analysis. Of these, 16 cases and 20 limbs, we performed "proximal GSV sparing surgery for Dodd perforator varicose veins". Laser or radiofrequency endovenous ablation of GSV was performed up to 2cm proximal to the Dodd perforator. Symptoms, clinical findings, venous filling index (VFI), ultrasound findings were reviewed at 1, 3, and 12 months postoperatively. The observation period ranged from 1 to 24 months (median 7.5 months).
RESULTS: Preoperative CEAP classification was C2:4 cases, C3:6 cases, C4:5 cases, C5:0 cases, and C6:1 case. At 1 month postoperatively, clinical symptoms improved in all patients. There were no varicose recurrences during observation period. Ultrasound findings showed that the main trunk of the central GSVs were patent without reflux and the Dodd perforators were occluded in all cases. VFI was improve from 2.7 ± 0.9ml/sec. preoperatively to 1.3 ± 0.07 ml/sec. at 3 months postoperatively ($p<0.01$).
CONCLUSION: Proximal great saphenous vein sparing surgery for varicose veins originate from Dodd perforator is feasible when the proximal GSV to Dodd perforator and the sapheno-femoral junction are competent.