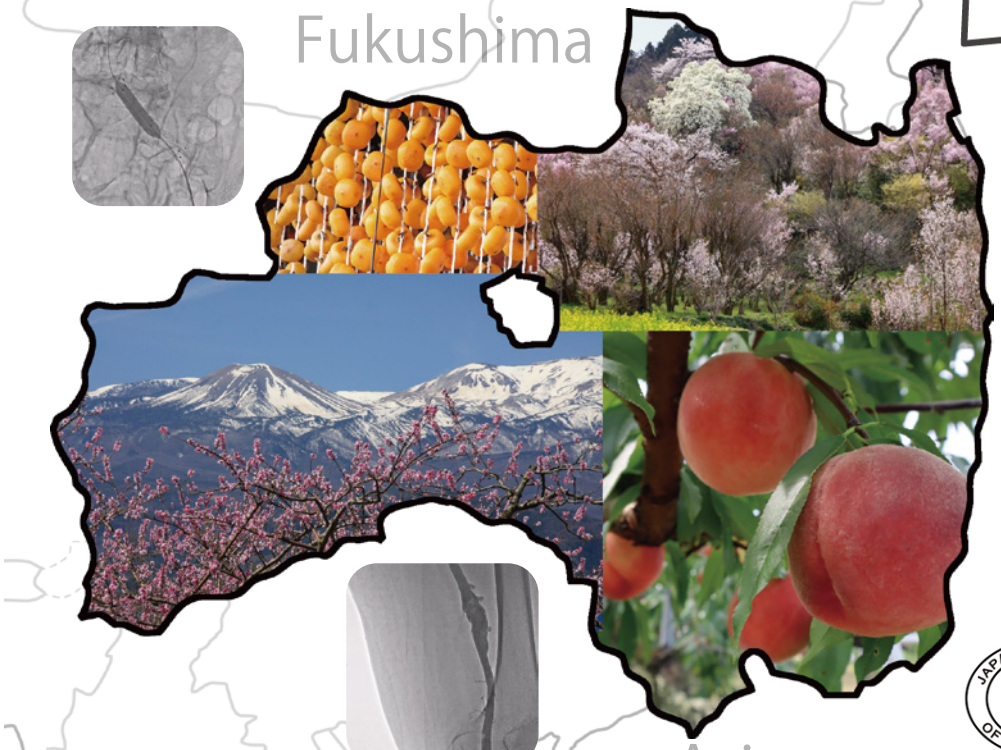
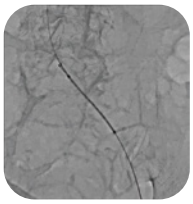
Asian Venous Forum 2026

in Fukushima, Japan

Innovation and Sustainability in Phlebology





Asia

JAPANESE SOCIETY OF PHLEBOLOGY
FOUNDED 1981

ASIAN VENOUS FORUM

Program & Abstracts

Date: July 3rd 2026

Venue:
Corasse Fukushima , Fukushima , Japan

Congress president:
Tomohiro Ogawa MD, PhD.
Director of Fukushima Daiichi Hospital

Administrative office:
Cardiovascular disease center, Fukushima Daiichi Hospital

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Welcome Messages

Dear members of the Asian Venous Forum, colleagues, and distinguished guests,

It is my great privilege to host the Asian Venous Forum in conjunction with the international session of the Annual Congress of the Japanese Society of Phlebology.

The annual AsVF meetings have traditionally been held together with the Asian Society for Vascular Surgery. Under the leadership of former AsVF President Dr. Shemining Wang, the first independent AsVF meeting was successfully organized in 2019, reflecting the strong wishes of our committee members. Although the COVID19 pandemic temporarily interrupted this movement, Past Presidents Prof. Takehisa Iwai, Prof. Dong Ik Kim, and Current President Sriram Narayanan together with the executive committee, have continued to encourage the establishment of an independent AsVF. I sincerely hope that this meeting will serve as a trailblazer for maintaining regular, independent phlebological meetings in Asia.

Thanks to your cooperation, we received more than 130 abstracts from 14 countries around the world. We are confident that this meeting will provide an excellent opportunity for all participants to share and discuss a wide range of topics in phlebology and lymphology.

Fukushima is a beautiful, traditional, and tranquil Japanese city, well known for its hot springs, abundant fruits, and excellent sake. We have also prepared receptions where you can enjoy the charm of Fukushima, and we look forward to welcoming you in person.

Once again, thank you very much for your cooperation and support.

Tomohiro Ogawa, MD
Congress president, Asian Venous Forum in Fukushima
Vice President, Asian Venous Forum

Welcome Messages

Dear Colleagues and Friends,

It is my great pleasure to welcome you to the Asian Venous Forum 2026 (AsVF 2026) in Fukushima, Japan.

AsVF serves as an international platform where venous specialists from Asia and around the world share scientific knowledge, clinical experience, and innovative ideas. We hope this meeting will contribute to the advancement of venous medicine and strengthen international collaboration.

This year, AsVF 2026 is being held jointly with the 46th Annual Congress of the Japanese Society of Phlebology. The program covers a wide range of topics, including varicose veins, chronic venous disease, venous thromboembolism, compression therapy, and venous interventions, providing opportunities for meaningful discussion and academic exchange.

We are honored to welcome specialists from 19 countries across Asia, Europe, North America, Latin America, the Middle East, and Africa. A total of 113 lectures and presentations are scheduled, reflecting the diversity and vitality of the global venous community.

In addition to the scientific program, we hope you will enjoy the social events and opportunities to build new friendships and professional relationships during your stay in Fukushima.

Finally, I would like to express my sincere gratitude to all participants, speakers, sponsors, and organizing committee members for their support. I wish you a productive and enjoyable meeting and look forward to welcoming you to Fukushima

July 2026

Takahiro Imai, M.D.
General Secretary
Asian Venous Forum 2026
Department of Vascular Surgery, Nishinokyo Hospital

Organizing committee

Congress president: Tomohiro Ogawa

General secretary: Takahiro Imai

Vice secretary: Xiaoning Tong

Assistant secretary: Aoi Ogawa

Scientific committee: Tomohiro Ogawa, Takahiro Imai, Hiroya Hayashi, Masami Shingaki, Xiaoning Tong

Advisory board: Takehisa Iwai, Makoto Mo

Domestic Faculty Daisuke Akagi, Eri Fukaya, Wakako Fukuda, Yutaka Hosoi, Hiroshi Kawasaki, Makoto Mo, Takaya Murayama, Kazuki Sakamoto, Yasuhiro Tanabe, Takashi Yamaki, Takashi Yamamoto, Hiroyoshi Yokoi, Yoshiko Watanabe

International Faculty Rashad Bishara (Egypt), Ruth Bush (USA), Chien-Hua Chang (Taiwan), Wonsuk Chung (Korea), John Forbes (USA), Sergio Gianesini (Italy), Kathleen Gibson (USA), Yao-Kuang Huang (Taiwan), Ravul Jindal (India), Chung Dann Kan (Taiwan), Hung-Yen Ke (Taiwan), Dong-Ik Kim (Korea), Woosik Kim (Korea), Ngoh Chin Liew (Malaysia), Yuliardy Limengka (Indonesia), Serge Mako (France), Akhmadu Muradi (Indonesia), Sriram Narayanan (Singapore), Nyityasmono Tri Nugroho (Indonesia), Sandeep Raj Pandey (Nepal), Insoo Park (Korea), Je Hoon Park (Korea), Sun-Cheol Park (Korea), Danny Pratama (Indonesia), Dedy Pratama (Indonesia), Angampally Rajeev (USA), Wittichai Saengprakai (Thailand), Nuttawut Sermsathanasawadi (Thailand), Evgeny Shaydakov (Russia), Joana Storino (Brazil), Jimmy Wei-Hwa Tan (Taiwan), Yu-Hern Tan (Taiwan), Windsor Ting (USA), Tomasz Urbanek (Poland), Jinsong Wang (China)

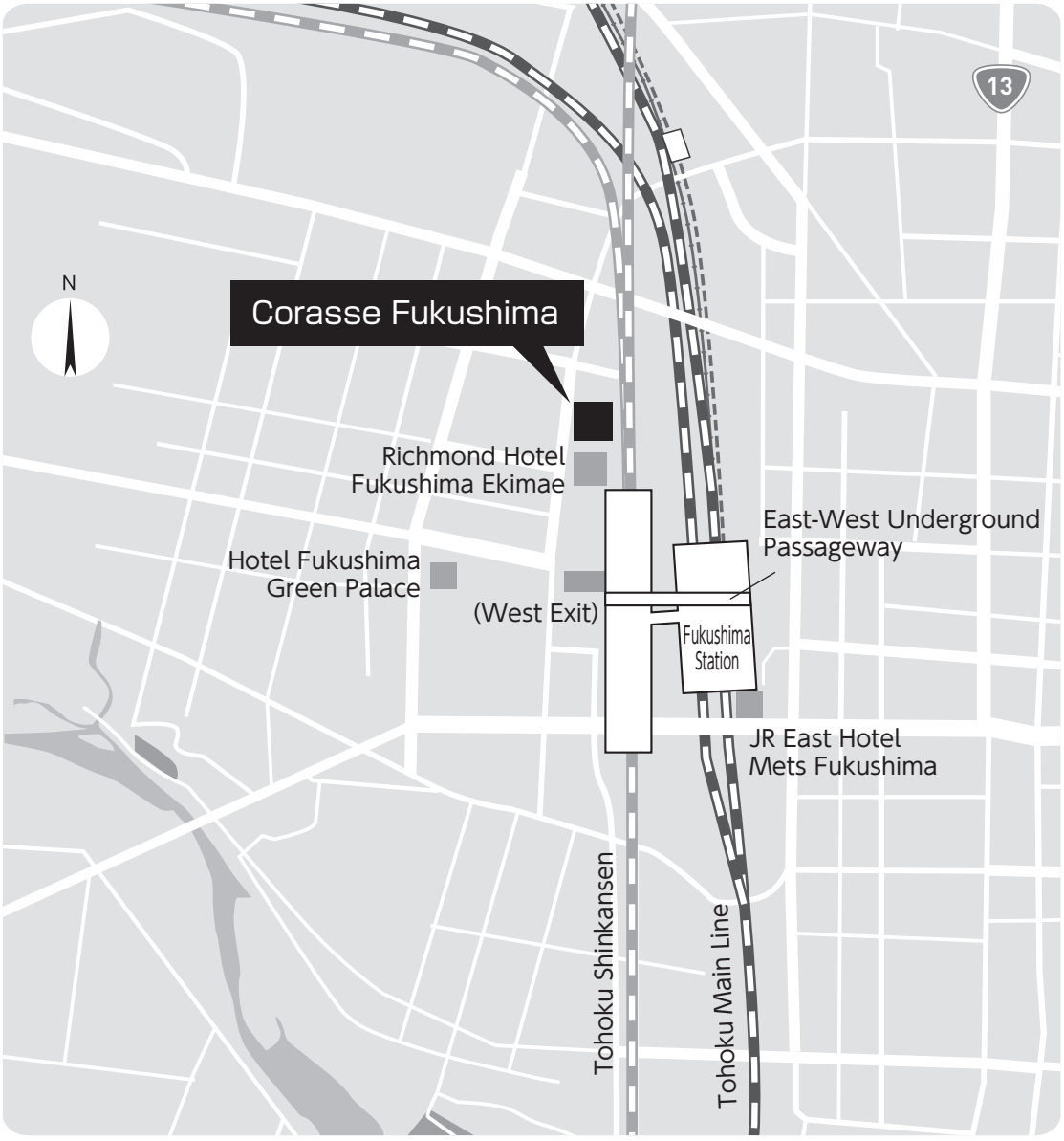
Council Members of Asian Venous Forum

President:	Sriram Narayanan
Vice president:	Tomohiro Ogawa
General secretary:	Ravul Jindal
Assistant general secretary:	Sandeep Raj Pandey
Treasurer:	Jinsong Wang

Past president:	Shunichi Hoshino
	Takehisa Iwai
	Dong IK Kim
	Shenming Wang

Counciler:	Niaz Ahmed Choudhury	Bangladesh
	Jinsong Wang	China
	Chan Yie Che	Hong Kong
	Ravul Jindal, Shoaib Padaria	India
	Tomohiro Ogawa	Japan
	Suncheol Park	Korea
	Naresh Govindarajanthran	Malaysia
	Sandeep Raj Pandey	Nepal
	Josefino Sanchez	Philippines
	Mussaad Al-Salman	Saudi Arabia
	Sriram Narayanan	Singapore
	Chung Dann Kan	Taiwan
	Nuttawut Sermsathanasawadi	Thailand
	Ahmed Kursat Bozkurt	Turkey

Access

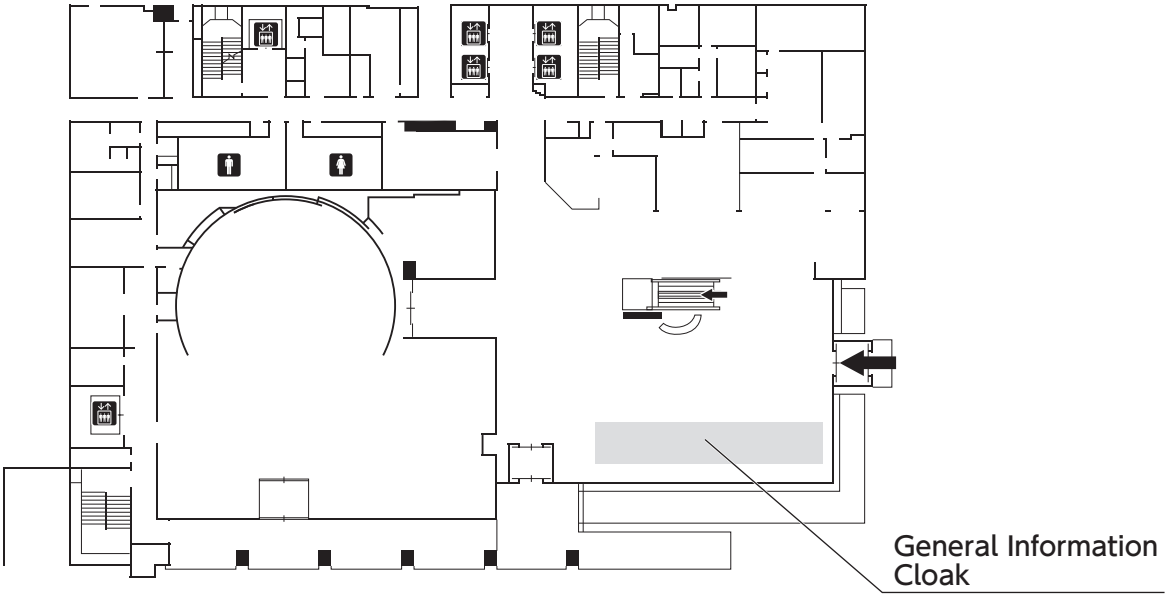


Access to the Venue

JR Fukushima Station — 3 minutes walk from the West Exit. — **Corasse Fukushima**

Floor Map

1F



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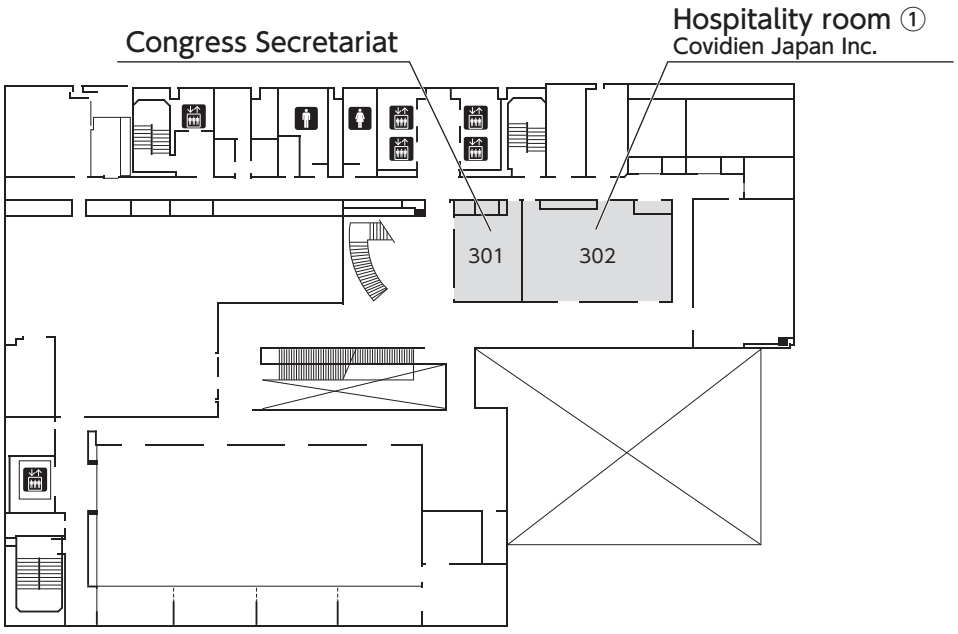

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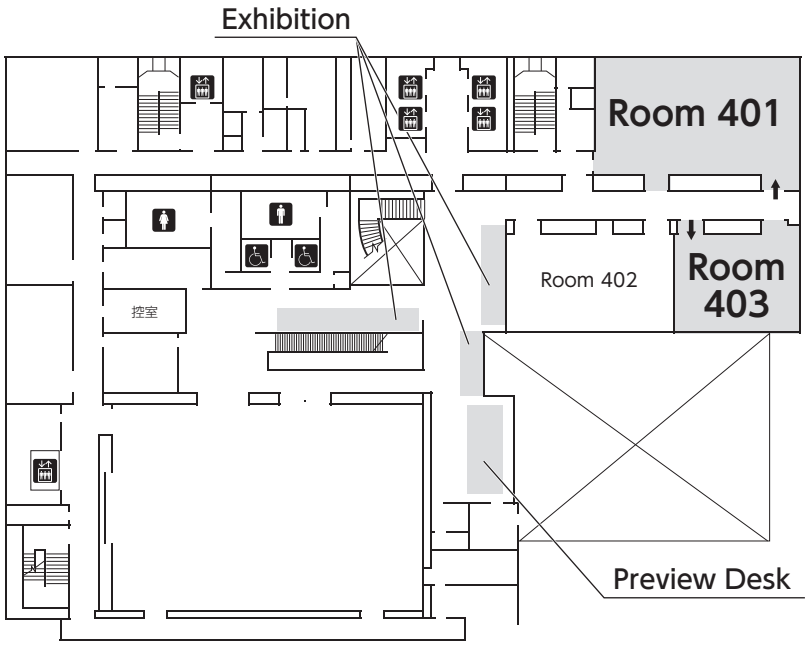
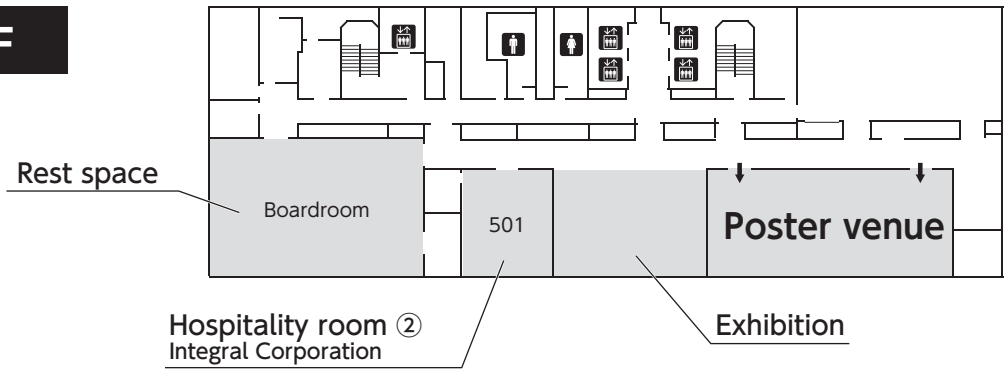

Exhibition
Room 401
Room 402
Room 403
控室
Preview Desk

5F


Rest space
Boardroom
501
Poster venue
Hospitality room ②
Integral Corporation
Exhibition

Timetable

July 3rd, 2026

	Room 401	Room 403	Poster Venue
8:00	8:00-8:25 **Sponsored Seminar 1** Sponsored by Essity	8:00-9:20 **JSP International Session 1 (v-WIN Award)** Pelvic / Congenital Venous Disorders and Vascular Malformations Chairperson: Takashi Yamaki, Dong-Ik Kim, Yoshiko Watanabe	
8:30 **Opening Remarks**			
9:00	8:30-9:40 **AsVF-TSVS Joint Session** AsVF - Taiwan Society for Vascular Surgery (TSVS) joint session "Current Status and Challenges in Venous Practice: Japan–Taiwan Perspectives" Chairperson: Hiroyoshi Yokoi, Chung-Dann Kan	9:30-11:00 **JSP International Session 2 (v-WIN Award)** Superficial Venous Disease and Endovenous Interventions 1 Chairperson: Yutaka Hosoi, Nuttawut Sermsathanasawadi, Xiaoning Tong	
10:00	9:40-10:20 **Scientific Session 1** Venous Intervention and Thromboembolic Disease Chairperson: Danny Pratama, Wuttichai Saengprakai, Daisuke Akagi		
11:00	10:30-11:50 **Special Lecture 1** Chairperson: Makoto Mo, Ravul Jindal, Niaz Ahmed Choudhury	11:10-12:00 **JSP International Session 3 (v-WIN Award)** Superficial Venous Disease and Endovenous Interventions 2 Chairperson: Wonsuk Chung, Akhmadu Muradi	
12:00	12:00-12:50 **Luncheon Seminar** Sponsored by Balton Sp. z o. o.		
13:00	13:00-13:50 **Special Lecture 2** Chairperson: Takashi Yamaki, Dong-Ik Kim, Jinsong Wang	13:00-14:40 **JSP International Session 4 (v-WIN Award)** Deep Vein Thrombosis, Pulmonary Embolism, and Cancer-Associated Thrombosis Chairperson: Yao-Kuang Huang, Angampally Rajeev, Hiroya Hayashi	
14:00	13:50-15:00 **AVF Session** Chairperson: Eri Fukaya, Takaya Murayama		15:30-16:12 **Poster Session 1** Chairperson: Wakako Fukuda 15:30-16:12 **Poster Session 2** Chairperson: Eri Fukaya 15:30-16:12 **Poster Session 3** Chairperson: Nyityasmono Tri Nugroho 15:30-16:12 **Poster Session 4** Chairperson: Daisuke Akagi 15:30-16:19 **Poster Session 5** Chairperson: Yutaka Hosoi
15:00	15:10-15:50 **Sponsored Seminar 2** Sponsored by Biolitec FZ LLC	14:40-15:40 **JSP International Session 5 (v-WIN Award)** Compression Therapy, Lymphatics, and Basic Phlebolymphology Chairperson: Yuliardy Limengka, Kazuki Sakamoto	
16:00	15:50-17:00 **Scientific Session 2** Chronic Venous Disease: Pathophysiology and Conservative Management Chairperson: Ravul Jindal, Sun-Cheol Park, Takahiro Imai	15:40-17:00 **JSP International Session 6 (v-WIN Award)** Special Topics in Venous and Vascular Surgery Chairperson: Sandeep Raj Pandey, Wakako Fukuda, Masami Shingaki	15:30-16:19 **Poster Session**
17:00	17:10-17:20 **Awards Ceremony** 17:20- **Closing Remarks**		
18:00			

Program

Asian Venous Forum 2026

Friday, July 3rd, 2026

Room 401

8:00～8:25 **Sponsored Seminar 1** Corporate Sponsor: Essity

Chairperson: Sun-Cheol Park (The Catholic University of Korea, Korea)

SS-1-1 Activities and effects of a qualification system for elastic compression stocking and compression therapy appliers of the Japanese Society of Phlebology: Elastic stocking and compression therapy conductor (ESCC)

Committee of elastic stocking and compression therapy conductor Japanese society of Phlebology, Japan

Makoto Mo

SS1-2 Japanese Society of Phlebology Clinical Practice Guideline for Compression Therapy in Venous Diseases 2025

Guideline Committee of Japanese Society of Phlebology, Japan Makoto Mo

8:30 **Opening Remarks**

Chairperson: Tomohiro Ogawa (Congress President, Asian Venous Forum 2026 / Fukushima Daiichi Hospital)

8:30～9:40 **AsVF - TSVS joint session**

AsVF - Taiwan Society for Vascular Surgery (TSVS) joint session
“Current Status and Challenges in Venous Practice: Japan–Taiwan Perspectives”

Chairperson: Hiroyoshi Yokoi (Japan), Chung-Dann Kan (Taiwan)

AT-1 2D Phase-Contrast MRV in Phlebology: The Taiwan Experience

Division of Thoracic and Cardiovascular Surgery, ChiaYi Chang Gung Memorial Hospital, Chiayi, Taiwan

Yao-Kuang Huang

AT-2 IVUS in management of May-Thurner syndrome

Division of Cardiovascular Surgery, Department of Surgery / Department of Transplantation, Tri-Service General Hospital; National Defence Medical University, Taipei, Taiwan

Hung-Yen Ke

AT-3 Management of Iliofemoral Deep Vein Thrombosis with Mechanical Thrombectomy, IVUS Guidance, and Venous Stenting

Dalin Tzu Chi Hospital Chien-Hua Chang

AT-4 IVUS in the management of post-thrombotic syndrome

Department of cardiovascular surgery, Mackay Memorial Hospital, Taipei, Taiwan Yu-Hern Tan

AT-5 Evolution and Current Status of Catheter-Based Interventions for Acute Deep Vein Thrombosis in Japan

National Cerebral and Cardiovascular Center, Osaka, Japan Hiroya Hayashi

AT-6 [VIDEO] Single-Center Experience and Future Challenges of Venous Intervention Using Novel Devices

St. Marianna University School of Medicine, Kawasaki, Japan Yasuhiro Tanabe

Discussion / Presentation of Commemorative Gifts

Dalin Tzu Chi Hospital, Taiwan Chien-Hua Chang

9:40～10:20 Scientific Session 1

Venous Intervention and Thromboembolic Disease

Chairperson: Danny Pratama (Indonesia), Wuttichai Saengprakai (Thailand) , Daisuke Akagi (Japan)

S-1-1 Optimizing Primary Venous Stent

Emory University Midtown Hospital WellStar West Georgia Medical Center, USA Angampally Rajeev

S-1-2 DVT management in himalayan region

Annapunra / Norvic Hospital, Kathmandu, Nepal Sandeep Raj Pandey

S-1-3 Revisiting Urokinase-Based Catheter-Directed Thrombolysis in the Era of Mechanical Thrombectomy: Is There Still a Role?

National Cheng Kung University Hospital, Taiwan Chung Dann Kan

S-1-4 Current Challenges and Evolving Techniques in Venous Stenting: Strategies for Optimizing Outcomes

Faculty of Medicine Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand Wittichai Saengprakai

10:30～11:50 Special Lecture 1

Chairperson: Makoto Mo (Japan), Ravul Jindal (India), Niaz Ahmed Choudhury (Bangladesh)

SP-1: AsVF Lecture

Progression Patterns of Accessory Saphenous Vein Reflux After Endovenous Treatment for Primary Lower-Limb Varicose Veins: A Prospective Observational Study

Fukushima Daiichi Hospital, Japan Tomohiro Ogawa

SP-2: EVF Winner Speech

Reflux patterns of lower limb varicose veins originating from the pelvis

Mater Dei Hospital / Medical Sciences Faculty of Minas Gerais, Brazil Joana Storino

SP-3: JSP-KSP Exchange Program

Reappraisal of Saphenofemoral Junction Management in the Era of Minimally Invasive Endovenous Treatment: The Role of Ultrasound-Guided Junction-Preserving Stripping

Department of Thoracic & Cardiovascular Surgery, National Medical Center, Seoul, Korea Woosik Kim

SP-4: Invited Lecture

[VIDEO] MICROFOAM: from basic science to clinical practice

University of Ferrara, Italy / Uniformed Services University of Health Sciences, USA / World Union of International Phlebolymphology Sergio Gianesini

SP-5: Invited Lecture

Endovascular Therapy for Post-Thrombotic Syndrome: What C-TRACT Means for Clinical Practice

University of Washington Division of Vascular Surgery, USA Kathleen Gibson

SP-6: Invited Lecture

Sclerotherapy I Saw, Sclerotherapy I'd Like to See

Kreussler Pharma, France Serge Mako

SP-7: Invited Lecture

Saphenous Sparing: present & future

St. Petersburg Phlebology Association, Russia Evgeny Shaydakov

SP-8: Invited Lecture

Updated Perspectives on Venous Leg Ulcer Management

Guangdong Provincial People's Hospital / Guangdong Academy of Medical Sciences, China Jinsong Wang

12:00～12:50 Luncheon Seminar

Corporate Sponsor: Balton Sp. z o. o.

Chairperson: Makoto Mo (Namiki Clinic, Japan)

LS Mechanochemical Ablation Using Flebogrif for the Treatment of Incompetent Saphenous Veins

The Charm Vein Center, Korea Insoo Park

13:00～13:50 Special Lecture 2

Chairperson: Takashi Yamaki (Japan), Dong-Ik Kim (Korea), Jinsong Wang (China)

SP-9: Invited Lecture

The impact of adjuvant ultrasound-guided foam sclerotherapy on ulcer recurrence. Long-term outcomes of a multicenter randomized controlled trial

Organization of Teaching Hospitals & Institutes of Egypt Rashad Bishara

SP-10: Invited Lecture

From Superficial Venous Treatment to Deep Venous Treatment – How I Do It

Vascular Surgery, Icahn School of Medicine at Mount Sinai, NY, USA Windsor Ting

SP-11: Invited Lecture

Tumescent assisted sclerotherapy – medical and esthetic indications

Department of General Surgery, Vascular Surgery, Angiology and Phlebology, Medical University of Silesia, Katowice, Poland

Tomasz Urbanek

SP-12: Invited Lecture

History of Asian Venous Forum

Sungkyunkwan University School of Medicine, Korea Dong-Ik Kim

SP-13: Invited Lecture

Treatment Practices of Varicose Veins in Bangladesh: Impact of Minimally Invasive Technologies

Department of Vascular Surgery, Bangladesh Medical University / Bangladesh Specialized Hospital Limited, Dhaka, Bangladesh

Niaz Ahmed Choudhury

13:50～15:00 AVF Session

Chairperson: Eri Fukaya (USA), Takaya Murayama (Japan)

AS-1 The American Venous Forum: Our Mission, Our Impact, Our Future

American Venous Forum, USA John Forbes

AS-2 Novel Adjuvant Therapies for C6 Chronic Venous Disease

John Sealy School of Medicine, University of Texas Medical Branch, USA Ruth Bush

AS-3 Venous Stent Placement: Patient Selection - Who, What, and When

Division of Vascular Surgery & Interventional Radiology, Icahn School of Medicine at Mount Sinai, New York, USA

Windsor Ting

AS-4 Introducing an Innovative Venous Valve Design

President, Egypt & Africa Vein and Lymph Association (EAVLA), Egypt Rashad Bishara

AS-5 Non rotational mechano-chemical ablation of the saphenous vein – when? and how?

Department of General Surgery, Vascular Surgery, Angiology and Phlebology, Medical University of Silesia, Katowice, Poland

Tomasz Urbanek

Discussion

15:10～15:50 Sponsored Seminar 2

Corporate Sponsor: Biolitec FZ LLC

Chairperson: Tomohiro Ogawa (Fukushima Daiichi Hospital)

SS-2-1 Treatment Strategies for Varicose Veins: Total GSV Ablation and Varicose Tributaries Ablation —The Importance of Preoperative Mapping and Technical Refinements

Harukas KAWASAKI Clinic, Japan Hiroshi Kawasaki

SS-2-2 Endovenous Laser Ablation for Varicose Tributaries and Japanese Guidelines

Yamamoto Vein Clinic, Japan Takashi Yamamoto

15:50～17:00 Scientific Session 2

Chronic Venous Disease: Pathophysiology and Conservative Management

Chairperson: Ravul Jindal (India), Sun-Cheol Park (Korea), Takahiro Imai (Japan)

S-2-1 Complications of cyanoacrylate closure

Thai Venous Forum / Department of Vascular Surgery, Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand

Nuttawut Sermsathanasawadi

S-2-2 Tricuspid Regurgitation as a Predictor of Chronic Venous Insufficiency: A Machine Learning Approach

Guangdong Provincial People's Hospital / Guangdong Academy of Medical Sciences, China Jinsong Wang

S-2-3 Demographic and Clinical Profile of Chronic Venous Disease in Elementary and Secondary Public School Teachers in Central Jakarta

Vascular and Endovascular Division, Department of Surgery, Ciptomangunkusumo Hospital, Faculty of Medicine Universitas Indonesia, Indonesia

Akhmadu Muradi

S-2-4 How to Achieve the Best Results with Foam Sclerotherapy in the Treatment of Varicose Veins

Fortis Hospital, Mohali, Punjab, India Ravul Jindal

S-2-5 [VIDEO] Chronic Venous Insufficiency -Pathophysiology, conservative management, and venoactive drugs

Department of Surgery, Faculty of Medicine and Health Sciences, University Putra Malaysia Liew NC

S-2-6 Compression Therapy for CVI in Korea

The Catholic University of Korea, Korea Sun-Cheol Park

S-2-7 Connecting the Dots: How Basic Venous Wall Physiology Informs Modern Diagnostics and Therapeutics

Cipto Mangunkusumo National Hospital, Indonesia Nyityasmono Tri Nugroho

17:10～17:20 **Awards Ceremony**

Presenter: Ravul Jindal (India)
Sun-Cheol Park (Korea)

17:20 **Closing Remarks**

Tomohiro Ogawa (Congress President, Asian Venous Forum 2026)

Room 403

8:00～9:20 **JSP International Session 1 (v-WIN Award)**

Pelvic / Congenital Venous Disorders and Vascular Malformations

Chairperson: Takashi Yamaki (Japan), Dong-Ik Kim (Korea), Yoshiko Watanabe (Japan)

IS-1-1 Demonstration of Pressure Gradient Reduction by Collateral Venous Occlusion in Nutcracker Syndrome

Department of Cardiovascular Surgery, Akita University, Akita, Japan Itaru Igarashi

IS-1-2 Pelvic Congestion Syndrome, an overlooked cause of leg venous insufficiency: an Indonesian experience

Mayapada Hospital Kuningan, Jakarta, and Beyoutiful Aesthetic Center, at T-Space Bintaro, Indonesia Ardy Limengka

IS-1-3 Site-Specific Differences in Genetic Mutation Detection in Vascular Malformations with Tissue Overgrowth: What Is the Optimal Specimen for Genetic Testing?

Department of Plastic and Reconstructive Surgery, Tohoku University Graduate School of Medicine, Sendai, Miyagi, Japan
Minami Tamagake

IS-1-4 Initial Outcomes of Sclerotherapy Using Bleomycin for Venous Malformations Refractory to Polidocanol and Ethanol

Department of Diagnostic and Interventional Radiology, Graduate School of Medicine, The University of Osaka, Osaka, Japan
Yu Masuda

IS-1-5 Abstract Withdrawal

IS-1-6 Abstract Withdrawal

IS-1-7 The Palma Procedure as a Salvage Strategy for Chronic Iliac Venous Occlusion Not Amenable to Endovascular Therapy: A Case Series

Division of Vascular and Endovascular Surgery, Department of Surgery, Universitas Indonesia Hospital, Depok, Indonesia
Nyityasmono Tri Nugroho

IS-1-8 Beyond the Saphenous System: A Case of Multi-segmental Varicose Recurrence and Chronic Ulceration Secondary to Occult Pelvic Venous Disorder

St. Luke's Medical Center- Quezon City, Philippines Ma Victoria Fernandez

9:30～11:10 JSP International Session 2 (v-WIN Award)

Superficial Venous Disease and Endovenous Interventions 1

Chairperson: Yutaka Hosoi (Japan), Nuttawut Sermsathanasawadi (Thailand), Xiaoning Tong (Japan)

IS-2-1 Prevalence of iliocaval venous obstruction and calf muscle dysfunction in patients with venous leg ulcer assessed by air plethysmography

Thai Venous Forum / Department of Vascular Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand
Nuttawut Sermsathanasawadi

IS-2-2 Endovenous laser ablation of the anterior saphenous vein

Yonsei Cardiovascular and Thoracic Surgery Clinic, Korea Wonsuk Chung

IS-2-3 Early Outcomes of Nuvena, a New Cyanoacrylate Closure System, for the Treatment of Incompetent Saphenous Veins

Charm Vein Center, Korea Insoo Park

IS-2-4 Early results and complication of Face Sclerotherapy

Osaka Vein Clinic, Japan Xiaoning Tong

IS-2-5 New venoactive drug in chronic venous diseases treatment. Multicenter prospective study

Peter State University, Saint-Petersburg, Petrozavodsk, Russia Evgeny Shaydakov

IS-2-6 Are Varicose Veins and Hemorrhoidal Disease Manifestations of a Systemic Venous Disorder? Evidence from a Nationwide Population-Based Cohort Study

Cathay General Hospital / National Tsing Hua University, Taiwan Meng-Lin Lee

IS-2-7 Fast-Track Management of Truncal Reflux in Varicose Veins: A Real-World Experience of Cyanoacrylate Closure in a High-Efficiency Vein Clinic in Taiwan

PW Clinic, Taiwan Po-Jen Ko

IS-2-8 1mm Punch Incision: A Refined Approach to Microphlebectomy for Nonaxial Varicosities

Anzhen Clinic, Taiwan Chi-Feng Weng

IS-2-9 Ultrasonographic venous abnormalities in CEAP C1 patients

Burapha University, Thailand Trakarn Chaivanit

IS-2-10 Postoperative Outcomes of a Patient-Driven Strategy for Compression Stocking Use After Endovenous Thermal Ablation: A Prospective Observational Study

Jeju Soo CardioVascular Clinic, Korea Kilsoo Yie

11:10～12:00 JSP International Session 3 (v-WIN Award)

Superficial Venous Disease and Endovenous Interventions 2

Chairperson: Wonsuk Chung (Korea), Akhmadu Muradi (Indonesia)

IS-3-1 Deep learning-based identification of skin lesions associated with chronic venous insufficiency in biopsy proven dermoscopic images

Department of Physical and Rehabilitation Medicine, Chung-Ang University College of Medicine, Korea /
Department of Physical and Rehabilitation Medicine, Chung-Ang University Gwangmyeong Hospital, Korea

Beom Suk Kim

IS-3-2 Adjunctive Oral Tranexamic Acid and Glutathione for Prevention of Hyperpigmentation and Phlebitis after Mechanochemical Ablation: A Retrospective Comparative Study

Darefit Clinic, Korea Dongju Seo

IS-3-3 Clinical Experience with Long-Pulsed Nd:YAG 1064nm Laser for Telangiectasia in Asian Patients: Protocol Optimization and Safety

Darefit Clinic, Korea Dongju Seo

IS-3-4 Optimization of the CLaCS Protocol: Improved Tolerability Without Loss of Efficacy

Clinic “Doctor Ven”, Russia Dmitrii Rubanchenko

IS-3-5 [VIDEO] NTNT Venous Ablation: A 5-Year Clinical Review of MOCA and Cyanoacrylate Closure (MMH Experience)

Mackay Memorial Hospital, Taiwan Huai-Hsuan Tung

13:00～14:40 JSP International Session 4 (v-WIN Award)

Deep Vein Thrombosis, Pulmonary Embolism, and Cancer-Associated Thrombosis

Chairperson: Yao-Kuang Huang (Taiwan), Angampally Rajeev (USA),
Hiroya Hayashi (Japan)

IS-4-1 When the great vein closes: a rare benign SVC syndrome defying endovascular therapy

Perpetual Help Medical Center Las Piñas Heart and Vascular Institute, Philippines Jaime David III Lozo

IS-4-2 The Role of Intravascular Ultrasound (IVUS) in Post-Thrombotic Syndrome

Tam Anh Hospital, Vietnam Nguyen Vu

IS-4-3 Efficacy of catheter-directed thrombolysis in the treatment of iliofemoral vein thrombosis

Tam Anh hospital, Vietnam Nguyen Thu Trang

IS-4-4 Dilated Superficial Veins as Conduits for Autologous Venous Reconstruction in Complex Post-Thrombotic Syndrome with Deep Venous Obstruction

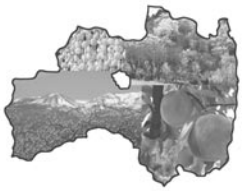
Division of Vascular Surgery, Siriraj Hospital, Mahidol University, Thailand Kanin Pruekprasert

IS-4-5 Efficacy and Patency of Venous Stenting into the Common Femoral Vein for Iliofemoral Steno-occlusive Venous Lesions

Department of Vascular Surgery, Cheongmac Hospital, Busan, Korea Seung-Jae Byun

IS-4-6 The current status of management of venous thromboembolism in cancer patients

Division of Cardiovascular Surgery, Department of Surgery, Kurume University, Fukuoka, Japan Momo Machida



IS-4-7 Short-term Outcomes of Thrombolysis versus Surgical Pulmonary Embolectomy in Patients with High-Risk Pulmonary Embolism

Department of Cardiac Surgery, International University of Health and Welfare, Narita, Japan Keiichi Ishida

IS-4-8 Independent Predictors of Occult Malignancy Diagnosed Within 30 Days After Acute VTE: Unprovoked VTE and Proximal DVT

Department of Cardiovascular Surgery, Japanese Red Cross Kumamoto Hospital, Kumamoto, Japan
Mai Matsukawa

IS-4-9 Balloon-Assisted Endovascular Thrombectomy in Limb-Threatening Deep Vein Thrombosis

Khon Kaen University, Thailand Parichat Tanmit

IS-4-10 Do Venous Stent Designs Matter? An Architecture-Based Analysis of Contemporary IDE Trial Outcomes

Vascular Surgery Unit, Department of Surgery, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia
Karthigesu Aimanan

14:40～15:40 JSP International Session 5 (v-WIN Award)

Compression Therapy, Lymphatics, and Basic Phlebolymphology

Chairperson: Yuliardy Limengka (Indonesia), Kazuki Sakamoto (Japan)

IS-5-1 Residual Symptoms After Varicose Vein Surgery: Effects of Exercise Habits and Reinforced Foot Care in Pump Dysfunction Patients

Center for Leg Health & Vein Care, Gifu Heart Center, Japan Shinji Tomita

IS-5-2 Quantitative lymphoscintigraphy SPECT/CT Parameters in the Assessment of Upper Extremity Lymphedema

Chung-Ang University Gwangmyeong Hospital, Korea Beom Suk Kim

IS-5-3 Abstract Withdrawal

IS-5-4 Silicone tube implants replacing obliterated lymphatics in lymphedema of upper and lower limbs in India

Cardiovascular clinic, India Rajesh Hydrabadi

IS-5-5 Ultra-High-Frequency Ultrasound Mapping of Lymphatic Structural Abnormalities to Guide Lymphaticovenular Anastomosis

Department of Plastic and Reconstructive Surgery, Chiba University, Japan Shinsuke Akita

IS-5-6 Lymphatic Vessel Quality Drives LVA Outcomes: Venous Reflux Reflects Surgical Strategy Evolution

Saitama Medical Center, Saitama Medical University, Japan Fumio Onishi

15:40～17:00 JSP International Session 6 (v-WIN Award)

Special Topics in Venous and Vascular Surgery

Chairperson: Sandeep Raj Pandey (Nepal), Wakako Fukuda (Japan),
Masami Shingaki (Japan)

IS-6-1 When a Groin Mass Is Not a Tumor: Two Cases of Saphenofemoral Junction Varix, Including a Giant Thrombosed Lesion

Tam Anh Hospital, Vietnam Dung Trung Do

IS-6-2 Multimodal Endovenous Management of Refractory Chronic Venous Insufficiency in a Patient with Post-Traumatic Lower Limb Deformity

St. Luke's Medical Center Quezon City, Philippines Nigel Jeronimo Santos

IS-6-3 Efficacy and Safety of Thromboprophylaxis in Vascular Surgery: Caprini Score Assessment in a Prospective Single-Center Study

Medical University of Silesia, Katowice, Poland Tomasz Urbanek

IS-6-4 Postoperative usability of the great saphenous vein as a potential venous conduit after CHIVA surgery for varicose veins

Department of Vascular Surgery, Parkway Healthcare / Department of Vascular Surgery, United Family Healthcare / Olivein Healthcare, Shanghai, China
Sophie Xiaoyin Zhu

IS-6-5 The Hemodynamic Revolution in Varicose Vein Treatment: The Role of Asia

Asian Venous Academy / Dr. Smile Medical Group, China Qiang Zhang

IS-6-6 Recurrence is Not Failure: A Hemodynamic Perspective on Varicose Vein Treatment Using a CHIVA-based Strategy

Dr. Smile Medical Group, China Jianping Deng

IS-6-7 Clinical Outcomes of CHIVA for Lower Extremity Varicose Veins with Different Reflux Sources

OLIVEIN, China Yijian Gu

IS-6-8 How to Make the Most of the Last Autologous Vein:Technical Considerations and Outcomes of Transposed Brachiobasilic Arteriovenous Fistula

Department of Cardiovascular Surgery, Ohyama Memorial Hospital, Japan Wakako Fukuda

Poster Venue

15:30～16:12 Poster Session 1

Chairperson: Wakako Fukuda (Japan)

IS-P1-1 Clinical Experience of the Treatment of Lateral Subdermal Venous Plexus (LSVP) Failure
Shokoku Shintaro Clinic, Japan Shintaro Shokoku

IS-P1-2 Efficacy of an Intensified Early Surveillance Protocol on Patency and Cost After AV Access Thrombectomy
Jeju Soo CardioVascular Clinic, Korea Kilsoo Yie

IS-P1-3 Narrative Review of Venous Thrombosis in Aviation and Space Flight, the 4th report
Kannai Medical Clinic, Japan Takaya Murayama

IS-P1-4 The safety and versatility of endo-venous laser ablation for leg varicose veins reaffirmed by the experience of tributary laser ablation
Chiba Clinic for Cardiovascular Disease, Japan Isamu Kawase

IS-P1-5 Clinical Evaluation of Redo Cases After Cyanoacrylate Closure for Saphenous Varicose Veins
Shokoku Shintaro Clinic, Japan Gentaro Shokoku

IS-P1-6 Safety and Clinical Outcomes of Laser Ablation of Varicose Tributaries Using the Barbecue Technique
Kanayama cardiovascular clinic Kaneko clinic, Japan Kan Kaneko

15:30～16:12 Poster Session 2

Chairperson: Eri Fukaya (USA)

IS-P2-1 A case of pulmonary artery stenting for recurrent solitary fibrous tumor in the pulmonary trunk after right pneumonectomy
The Department of Cardiovascular Surgery, Southern Tohoku General Hospital, Fukushima, Japan Yutaro Kurihara

IS-P2-2 Treatment Outcomes of Deep Venous Stenting at Our Institution
Vascular Surgery, International University of Health and Welfare, Japan Haruki Inomata

IS-P2-3 A Case of a Soft Tissue Tumor Near the Greater Saphenous Vein Suspected to be a Venous Aneurysm
The Department of Cardiovascular Surgery, Nakatsu Municipal Hospital, Oita, Japan Keiko Urushino

IS-P2-4 Endovascular Recanalisation for Chronic Post-Thrombotic Iliofemoral Venous Occlusion: Clinical Improvement Beyond Technical Success
Vascular Surgery Unit, Department of Surgery, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia Karthigesu Aimanan

IS-P2-5 A case of abdominal aortic aneurysm complicated with deep vein thrombosis successfully treated with perioperative anticoagulation therapy and surgical treatment
Jichi Medical University Saitama Medical Center, Japan Yuki Komura

IS-P2-6 Chronic Venous Disease as the “Hidden Culprit” of Lower Extremity Discomfort: A Physiatrist’s Perspective
Department of Physical and Rehabilitation Medicine, Chung-Ang University College of Medicine, Seoul, Korea Beom Suk Kim

15:30～16:12 Poster Session 3

Chairperson: Nyityasmono Tri Nugroho (Indonesia)

IS-P3-1 Repeated Recanalization of Varicose Vein after Cyanoacrylate Closure and Endovascular Laser Ablation, Successfully Managed by Varicectomy: A Case Report

Division of Vascular Surgery, Sakakibara Heart Institute, Tokyo, Japan Go Urabe

IS-P3-2 A case of cellulitis after endovenous laser ablation for varicose veins successfully treated with Vacuum Assisted Closure therapy

Division of Vascular Surgery, Sakakibara Heart Institute, Tokyo, Japan Go Urabe

IS-P3-3 Total foot care in our regions is associated with medical care of varicose veins

Nanko hospital, Japan Tatsuya Ozawa

IS-P3-4 Abstract Withdrawal

IS-P3-5 Total EVLT. Early Experience with a Comprehensive Single Session Laser Strategy

Indonesian Society for Vascular and Endovascular Surgery, Indonesia Hendra Wibowo

IS-P3-6 A Case of Residual Reflux After Surgical Preservation of the Proximal Great Saphenous Vein with a Dodd Perforator

Department of Cardiovascular Surgery, Yokohama Minami Kyosai Hospital, Japan Ryuto Sakanaka

15:30～16:12 Poster Session 4

Chairperson: Daisuke Akagi (Japan)

IS-P4-1 A case of proximal deep vein thrombosis triggered by pelvic lymphoceles infection following surgery for endometrial cancer

Rakuwakai Otowa Hospital, Japan Shu Nakayama

IS-P4-2 Percutaneous Thrombectomy Using a Large-Bore Sheath for Extensive Deep Vein Thrombosis Associated with Iliac Vein Compression Syndrome: A Three-Case Series

Vascular Surgery, Institute of Science Tokyo, Japan Tsuyoshi Ichinose

IS-P4-3 Microgravity and Space Radiation Effects on Microvascular and Lymphatic Systems: A Narrative Review

Kasai Umikaze Medical Clinic, Japan Yuka Sakurai

IS-P4-4 Pelvic Congestion Syndrome in Disguise: Refractory Lower Extremity Venous Insufficiency and Urinary Retention in an Octogenarian

St. Luke's Medical Center Quezon City Dr. Homobono Calleja Heart and Vascular Institute, Philippines

Salvador Angelo IV Panelo

IS-P4-5 A Case of Staged Treatment for a Right Popliteal Venous Aneurysm Associated with Lower Extremity Varicose Veins

Shinyurigaoka General Hospital Akinori Hotta

IS-P4-6 Can tributary varices improve with truncal ablation alone? A study of ablation range beyond the tributary junction

Kamiooka Varicose Vein Clinic, Japan Kazumi Nakamura

15:30～16:19 Poster Session 5

Chairperson: Yutaka Hosoi (Japan)

IS-P5-1 A case of bovine pericardial patch plasty after resection of inferior vena cava with tumor thrombus of renal cell carcinoma

Department of Vascular Surgery, Institute of Science Tokyo Hospital, Japan Yoshiki Wada

IS-P5-2 A Case Series of Nine Patients with Popliteal Venous Aneurysm

Division of Vascular Surgery, Institute of Science Tokyo, Tokyo, Japan Kazuki Tsukuda

IS-P5-3 Investigation of Compression Pressure and Stiffness in Compression Therapy Using Elastic Bandages with Pressure Indicators

Department of Cardiovascular Surgery, Yokohama Minami Kyosai Hospital, Japan Aya Tateishi

IS-P5-4 A Study of 13 Cases of Tumors Invading Central Veins Treated with Multidisciplinary Surgical Collaboration in Our Department

Department of Thoracic and Cardiovascular Surgery, Nara Medical University, Nara, Japan Shun Hiraga

IS-P5-5 A Case of Prosthetic Graft Bypass for an Arteriovenous Fistula Venous Aneurysm Caused by Repeated Puncture During Fistula PTA

Yokohama City Minato Red Cross Hospital, Kanagawa, Japan Riki Sumiyoshi

IS-P5-6 Recurrence of Varicose Vein after Endovenous Laser Therapy in a Tertiary Care Center: A Descriptive Cross-sectional

Department of Cardiothoracic and Vascular Surgery (CTVS), National Academy of Medical Sciences, Bir Hospital, Mahabauddha, Kathmandu, Nepal
Deepak Thapa Magar

IS-P5-7 Outcome of High Ligation combined with stripping and endovenous laser ablation of the great saphenous Vein: an early results of a single center Study

Department of Cardiothoracic and Vascular Surgery (CTVS), National Academy of Medical Sciences, Bir Hospital, Mahabauddha, Kathmandu, Nepal
Deepak Thapa Magar

SP-1: AsVF Lecture

Progression Patterns of Accessory Saphenous Vein Reflux After Endovenous Treatment for Primary Lower-Limb Varicose Veins: A Prospective Observational Study

Tomohiro Ogawa
Fukushima Daiichi Hospital, Japan

Reflux of the accessory saphenous vein (ASV) is frequently observed in recurrent varicose veins following endovenous treatment of the great saphenous vein (GSV). This study aimed to evaluate changes in reflux patterns of the accessory saphenous vein after endovenous treatment and to investigate factors associated with the development of such reflux.
Methods: A total of 212 patients (235 limbs) with primary varicose veins underwent endovenous laser ablation, radiofrequency ablation, or endovenous embolization of the GSV. All patients were followed using duplex ultrasound from preoperative assessment to more than 1 year postoperatively. CEAP clinical classifications were C2: 139 limbs, C3: 58 limbs, and ≥C4: 38 limbs. The procedures performed were endovenous thermal ablation in 191 limbs, and endovenous embolization in 44 limbs. Additional procedures included concomitant phlebectomy iand sclerotherapy.
Results: During a mean follow-up period of 54.7 months, new reflux in the thigh ASV was observed in 25.5 % of limbs, with a peak incidence within 2 years postoperatively and a mean onset at 26.1 months. Among these, reflux progression was ascending in 71.7%, descending in 16.7 %, and showed no progression in 11.7%.
Comparison between limbs with postoperative ASV reflux and those without showed no significant differences in preoperative CEAP C2 proportion, frequency of preoperative thigh ASV reflux, type of endovenous procedure, frequency of concomitant phlebectomy, or postoperative sclerotherapy. However, residual varicosities at 1 month, residual venous reflux at 1 month, and the presence of varicosities at final follow-up were significantly more frequent in the reflux group.
Conclusion: Reflux of the ASV after GSV endovenous catheter treatment peaks within 2 years postoperatively and continues to accumulate over time, with a high tendency to progress from distal to proximal segments. Early postoperative residual calf venous reflux and residual varicosities appear to be associated factors for the development of postoperative ASV reflux.

SP-2: EVF Winner Speech

Reflux patterns of lower limb varicose veins originating from the pelvis

Joana Storino
Mater Dei Hospital / Medical Sciences Faculty of Minas Gerais, Brazil

Background: Pelvic venous insufficiency is an important but frequently overlooked cause of lower limb varicose veins and early recurrence following superficial venous interventions. Understanding the reflux patterns and distribution of lower limb varicose veins with pelvic origin is crucial for preventing recurrence and unsatisfactory outcomes, which may result from incomplete or inadequate investigation. Methods: Data from 49 female patients (62 limbs) with pelvic reflux that connects to the lower limbs through pelvic escape points were analyzed. All patients were examined for reflux in the standing position using duplex ultrasound. Special attention was given to the reflux patterns, distribution, and connections to the saphenous veins, nerves, and lymph nodes. Results: Most patients were classified as CEAP C2 (95%), and 70% reported leg pain. The most frequently observed patterns were varicose veins on the posterior surface of the thigh (19%), veins connected to the great saphenous vein (GSV) along the thigh and leg (29%), and veins running parallel to the great saphenous vein on the medial thigh (26%). Varicose veins confined exclusively to the perineal region were identified in 15% of patients. Less common patterns included varicose veins on the anterior thigh (8%), veins associated with the sciatic nerve (10%), and veins with lymph node connections (8%). Varicose veins connected to the small saphenous vein were the least frequent, accounting for 5% of cases. Conclusions: Although the GSV is often involved in patients with pelvic venous insufficiency and escape points, non-saphenous varices appear to play a more prominent role in the reflux pattern. These findings support the concept that pelvic-origin reflux manifests as distinct patterns of lower limb varicose veins through defined pelvic escape points, underscoring the importance of thoroughly assessing the connection between pelvic and lower limb venous territories. A better understanding of the distribution of non-saphenous reflux during venous mapping is essential for optimizing treatment strategies and reducing the risk of recurrence.

Keywords: Varicose Veins, Pelvic Veins, Venous Insufficiency, Saphenous Vein, Duplex Ultrasonography

SP-3: JSP-KSP Exchange Program

Reappraisal of Saphenofemoral Junction Management in the Era of Minimally Invasive Endovenous Treatment: The Role of Ultrasound-Guided Junction-Preserving Stripping

Woosik Kim[1], Jin Yong Jeong[2]
Department of Thoracic & Cardiovascular Surgery, National Medical Center[1], Catholic University of Korea[2]

Management of great saphenous vein insufficiency has changed considerably over the past two decades. Conventional surgery was traditionally based on the concept that flush ligation of the saphenofemoral junction, together with extensive treatment of its tributaries, was important for preventing groin recurrence. In contrast, contemporary minimally invasive endovenous treatments generally preserve the junction by initiating treatment distal to it, thereby reducing unnecessary groin dissection while maintaining favorable clinical outcomes. This change has raised an important question regarding how the preserved saphenofemoral junction should be interpreted in current practice.
At the same time, surgical treatment itself has also evolved. Modern stripping techniques are not necessarily equivalent to conventional flush ligation surgery. The use of ultrasound guidance, a limited groin incision, selective handling of the proximal great saphenous vein, preservation of tributaries, and avoidance of extensive dissection around the junction have made surgery less invasive and more focused. In this context, junction-preserving stripping may be regarded not simply as a traditional procedure, but as a refined surgical approach that deserves reconsideration within the spectrum of contemporary treatment strategies.
The long-term significance of preserved or residual saphenofemoral junction anatomy remains to be fully clarified. The presence of a residual junction or a short stump does not necessarily indicate treatment failure. Rather, the more relevant issue may be whether the preserved junction remains a stable physiologic drainage pathway or becomes a pathologic source of recurrent reflux connected to recurrent superficial varicosities. For this reason, careful duplex ultrasound assessment is of particular importance. Relevant findings include stump morphology, terminal valve visibility, stump and tributary reflux, anterior accessory saphenous vein involvement, proximal residual or recanalized flow, and groin recurrent venous networks.
From this perspective, reappraisal of saphenofemoral junction management appears both timely and appropriate. Assessment of long-term outcome may need to move beyond the simple presence or absence of residual junctional anatomy and toward a more hemodynamic interpretation of late findings. Within such a framework, the role of junction-preserving stripping may be positioned more appropriately alongside contemporary minimally invasive endovenous treatment.

SP-4: Invited Lecture

MICROFOAM: from basic science to clinical practice

Sergio Gianesini

University of Ferrara, Italy / Uniformed Services University of Health Sciences, USA / World Union of International Phlebolymphology

Foam sclerotherapy has evolved from an empirical technique into an evidence-based treatment whose effectiveness depends not only on the pharmacological properties of the sclerosant but also on the physical characteristics of the foam itself. Recent advances in foam science have highlighted the pivotal role of bubble size, geometry, cohesion, and stability in determining both therapeutic efficacy and safety. Microfoams, generally characterized by bubble diameters below 250 μm, provide a substantially greater bubble count and endothelial contact surface than larger foams, allowing a more homogeneous interaction with the venous wall while minimizing the risk of occluding small arterial vessels in the presence of right-to-left shunts. The behavior of microfoam is governed by fundamental physical principles, including surface tension and Laplace pressure, which drive the coarsening process whereby smaller bubbles progressively dissolve into larger ones. Understanding these mechanisms has led to the optimization of foam production by modulating variables such as sclerosant concentration, liquid-to-gas ratio, gas composition, syringe size, temperature, and injection speed. While nitrogen-rich foams exhibit superior stability, carbon dioxide-containing formulations offer important safety advantages through more rapid physiological absorption, emphasizing the need to balance persistence with biocompatibility. Furthermore, the ideal medical microfoam differs from conventional industrial foams by combining fluidity, cohesion, and elasticity, enabling it to pass through fine needles, efficiently displace intravascular blood, and rapidly recover its structure within the target vein. These rheological properties maximize endothelial exposure to the sclerosant while limiting unnecessary dilution and systemic gas exposure. A comprehensive understanding of both the biochemical and biophysical determinants of foam behavior provides the basis for a more rational and standardized approach to foam sclerotherapy. Future technological developments should discriminate among semi-automated and fully automated foam sclerotherapy production options, focusing on reproducible production methods capable of generating optimized microfoam formulations, thereby improving procedural consistency, clinical outcomes, and patient safety across the broad spectrum of venous disorders.

SP-5: Invited Lecture

Endovascular Therapy for Post-Thrombotic Syndrome: What C-TRACT Means for Clinical Practice

Kathleen Gibson
University of Washington Division of Vascular Surgery, USA

Post-thrombotic syndrome (PTS) remains a common and often undertreated cause of chronic venous morbidity, with symptoms ranging from edema and pain to venous claudication and ulceration. While iliac vein stenting has been widely adopted for patients with chronic venous obstruction, high-quality comparative data demonstrating clinical benefit have been limited. The recently published C-TRACT trial provides the first multicenter randomized evidence evaluating the role of endovascular therapy in patients with moderate to severe PTS and imaging-confirmed iliac vein obstruction.

In this study, patients treated with iliac vein stenting and optimized medical therapy experienced a statistically significant reduction in PTS severity at 6 months compared with standard therapy alone (VCSS difference −2.0, p=0.001), along with substantial improvements in venous disease–specific and general quality of life. These findings support the physiologic importance of restoring venous outflow. However, the magnitude of clinical improvement was modest, and treatment was associated with a higher rate of bleeding, largely related to more intensive antithrombotic therapy .

From a clinical perspective, these results raise important questions. Which patients derive meaningful benefit from intervention? Is the observed improvement sufficient to justify lifelong implications of stent placement and anticoagulation? And how should these data influence current thresholds for treatment in patients with PTS?

This presentation will review the design and key outcomes of the C-TRACT trial and place them in the context of everyday clinical decision-making. Emphasis will be placed on patient selection, symptom patterns most likely to respond to intervention, and the balance between expected benefit and procedural risk. Ultimately, C-TRACT does not eliminate the need for careful clinical judgment, but it does provide a stronger evidence base to guide discussions with patients and refine treatment strategies for chronic venous obstruction.

SP-6: Invited Lecture

Sclerotherapy I Saw, Sclerotherapy I'd Like to See

Serge Mako
Kreussler Pharma, France

Sclerotherapy is a highly effective, minimally invasive, and cost-efficient treatment for chronic venous disease. However, important variations in daily practice may compromise treatment efficacy and patient safety.

This presentation reviews common practices observed in routine clinical settings and compares them with the standards recommended by current guidelines and expert consensus. Particular attention is given to patient selection, duplex ultrasound assessment, informed consent, foam preparation, injection technique, and respect of contraindications.

Optimal outcomes require a systematic approach before, during, and after treatment. Accurate ultrasound guidance, appropriate sclerosant concentration and volume, high-quality foam preparation, and continuous patient monitoring are key factors for success.

The presentation highlights the importance of standardization and adherence to good clinical practice in order to improve treatment effectiveness, reduce complications, and achieve more predictable long-term results.

Keywords
Sclerotherapy; Foam sclerotherapy; Ultrasound guidance; Best practice; Chronic venous disease.

SP-7: Invited Lecture

Saphenous Sparing: present & future

Evgeny Shaydakov
St. Petersburg Phlebology Association, Russia

Relevance:
Prevention and timely treatment of varicose disease in its early stages are the most important principles of clinical phlebology. In some countries, CHIVA and ASVAL operations have gained some popularity among preventive and vein-preserving surgeries.
Objective: to evaluate the immediate and long-term results of CHIVA and ASVAL surgeries. To determine effective methods for improving the results of vein-preserving surgeries
Results: In 1999, we performed 73 operations in our clinic. Of these, according to the methodology CHIVA 6 (8%) and ASVAL 67 (92%). Long-term results were studied in 43 patients for 25 years All patients required re-intervention to eliminate progressive GSV reflux. 3-5 years-12 patients (28%); 5-10 years- 8 patients (19%); 10-15 years-14 patients (32%); 15-20 years- 6 patients (14%); 20-25 years-3 patients (7%)
To identify the causes of unsatisfactory long-term results, we performed the following studies:
1. The level of endothelium in 129 patients with varicose veins. It was found that endothelial dysfunction is most pronounced in the early stages of the disease. Therefore, the level of endotheliosis can be used to justify the performance of preventive and vein-preserving surgeries.
2. The morphology of the valve rollers (VR) of the great saphenous vein (GSV). The surgical material from 48 patients was examined. At the same time, 5 variants of the structure of the VR are distinguished. In three variants, the valve roller is significantly dominated by connective tissue, accounting for more than 75% of the volume. The ligamentous apparatus is weak. If the valve rollers of the veins are weak, it may indicate a high risk of progression of the pathology after surgical treatment.
Conclusions:
1. Preventive and vein-preserving operations such as CHIVA and ASVAL should be justified not only hemodynamically, but also anatomically and pathogenetically 2. The use of modern endothelioprotectors can significantly improve the results of these operations and preserve blood flow through the GSV

SP-8: Invited Lecture

Updated Perspectives on Venous Leg Ulcer Management

Jinsong Wang
Guangdong Provincial People's Hospital / Guangdong Academy of Medical Sciences, China

Objective:
To synthesize the latest evidence and contemporary perspectives on the management of venous leg ulcers (VLUs), clarify the optimization direction of diagnostic and therapeutic strategies, and address the clinical challenges of VLUs such as chronicity, recurrence, and poor patient adherence.
Methods:
A comprehensive review of recent high-quality studies, clinical practice guidelines, and systematic reviews on VLU management published in PubMed was conducted. The key contents included diagnostic methods, core therapeutic measures, adjuvant treatments, and multidisciplinary care strategies, with emphasis on evidence-based updates and clinical applicability.
Results:
Venous duplex ultrasound is the gold standard for diagnosing VLU-related venous reflux and obstruction, combined with ankle-brachial index (ABI) measurement to exclude concurrent arterial disease. Axial great saphenous vein reflux was detected in VLU with duplex ultrasound examination. Below-knee great saphenous vein reflux and calf perforator reflux are more frequent. VLU might be associated with male gender, diabetes and BMI. The American Vein & Lymphatic Society Patient Reported Outcome Venous Registry demonstrated that 85% of the leg wounds in the present study were venous in origin and 97% possessed surgically correctable disease. Early referral to dedicated vein centers with appropriate venous reflux management as a part of the multidisciplinary team caring for patients with venous leg ulcers. Compression therapy (35–40 mmHg at the ankle) remains the cornerstone of VLU treatment, with modern adjustable and multilayered compression systems improving patient adherence. Endovenous ablative techniques (radiofrequency, laser) and foam sclerotherapy have become first-line interventions for superficial venous reflux, significantly reducing ulcer recurrence rates. Venoactive medicin such as micronized purified flavonoid fraction (MPFF) and pentoxifylline can promote ulcer healing and alleviate related symptoms. Advanced wound care (debridement, moisture-balanced dressings) and multidisciplinary management (calf muscle pump rehabilitation, patient education) further optimize treatment outcomes. However, poor adherence, comorbidities, and persistent recurrence remain major clinical challenges.
Conclusion:
The management of VLUs has achieved significant progress in diagnostic refinement, therapeutic diversification, and holistic care. Personalized long-term management plans based on evidence-based medicine are crucial to improving healing rates and reducing recurrence. Future research should focus on precision medicine, novel biomarkers, and digital health tools to further optimize VLU management.

Keywords: Venous leg ulcer; Chronic venous disease; Compression therapy; Endovenous ablation; Wound care

SP-9: Invited Lecture

The impact of adjuvant ultrasound-guided foam sclerotherapy on ulcer recurrence. Long-term outcomes of a multicenter randomized controlled trial

Rashad Bishara
Organization of Teaching Hospitals & Institutes of Egypt

Objective: The addition of ultrasound-guided peri-ulcer foam sclerotherapy (PUFS) for the incompetent network of veins in the vicinity of the ulcer has been shown to reduce the time to ulcer healing. Long term follow-up was undertaken to test the hypothesis that PUFS reduces venous leg ulcer (VLU) recurrence.

Methods: All patients included in the previously published RCT were followed up for a minimum period of 12 months following VLU healing, to assess VLU recurrence, quality of life (r-VCSS, SF12), and duplex findings.

Results: Six out of 65 patients were lost to follow-up (one death). All the remaining 58 patients were followed up for a minimum of 12 months (mean follow-up 2.2 years). Ulcer recurrence was significantly reduced in Group A, who received PUFS, compared to Group B: 3/25 (12%) vs 15/33 (45%) (p=0.006). Multivariable Cox proportional hazards regression model showed that Group A had a significantly lower hazard of recurrence compared to Group B (adjusted HR = 0.20, 95% CI: 0.06–0.75, p = 0.016). The mean ulcer-free time for Group A was significantly greater than Group B: 1059 (95% CI: 960-1158) days compared to 736 (95% CI: 587-885) days (p=0.002). The rVCSS was significantly lower in Group A than in Group B: 4.45 vs 7.94 (p=0.018) at final follow up. Patients who had duplex-confirmed sub-ulcer vein obliteration at follow-up had a significantly improved ulcer-free time (log-rank test, $\chi^2 = 9.045$, p = 0.003).

Conclusions: The use of adjuvant PUFS reduced the recurrence rates of VLU during a mean follow-up of 2.2 years, increased ulcer-free days, and improved the quality of life. Duplex-confirmed obliteration of the refluxing sub-ulcer network of veins on follow-up was associated with a reduced VLU recurrence.

SP-10: Invited Lecture

From Superficial Vein Treatment to Deep Venous Disease Treatment – How I Do It

Windsor Ting
Vascular Surgery, Icahn School of Medicine at Mount Sinai, NY, USA

We treat superficial venous disease (SVD) first with endovenous thermal ablation and/or sclerotherapy. We suspect a concurrent chronic venous obstruction (CVO) in the iliofemoral veins in four groups: severe venous symptoms but mild SVD, persistent venous symptoms after successful SVD treatment, atypical SVD, and severe & recurrent SVD. We perform imaging if symptoms persist after compression therapy. Magnetic resonance venography (MRV) of abdomen and pelvis is preferred over CT venography because MRV shows the compressed CIV and provides better visualization of abdominal and pelvic collateral veins which is an important indicator of iliofemoral stenosis. Approximately 20% of imaging may be falsely negative for CVO. The most important determinant whether to intervene is severity and persistence of symptoms. Bilateral common femoral vein cannulation with a 10 French introducer sheath is our standard approach. Heparin, bolus of 5,000 units followed by 1,000 units every 30 minutes, is administered. We utilize venography and intravascular ultrasound (IVUS) in every case. A left common iliac vein (CIV) compression stenosis, the May Thurner anatomy, found in 90% of patients, but 40% have contralateral compression stenosis. Approximately 25% of CVO patients have history or intraoperative finding of chronic deep vein thrombosis (DVT), typically seen as a diffuse stenosis rather than as a focal stenosis from compression. IVUS is essential to locate and quantify the stenosis, and to guide the stent placement. Decision to stent is guided by severity of symptoms and the presence of a stenosis of 50% or greater when compared to an ipsilateral or contralateral normal vein. We use the formula short axis on IVUS of vein + long axis divided by 2 and adding 2 mm for stent selection, usually 18 mm for males and 16 mm for females. We avoid shorter stents less than 60 mm in length, and use longer stents of 90mm, 120mm, and 150 mm in length, using the CIV stenosis and the smaller EIV to anchor the stent in place. CIV compression stenosis is typically located at or close to the CIV orifice, and the precise stent placement at this location is an important determinant of outcome. We routinely position the tip of the IVUS in the distal IVC placed from the contralateral iliac vein to guide stent placement. This technique allows us to monitor live the precise placement of the CIV stent. We don't place stent below the inguinal ligament in the CFV except when indicated in a DVT setting. We discharge all patients home on the same day with rivaroxaban 10mg daily for 30 days as an off-label prophylaxis against DVT.

SP-11: Invited Lecture

Tumescent assisted sclerotherapy – medical and esthetic indications

Tomasz Urbanek
Department of General Surgery, Vascular Surgery, Angiology and Phlebology, Medical University of Silesia, Katowice, Poland

Tumescent assisted sclerotherapy (TAS) expands the possibilities of the standard ultrasound guided sclerotherapy. The vein lumen decrease, as well as an emptying of the treated vein by the perivenous tumescent solution application, result in the foam volume reduction and increased procedure safety. According to the 2022 European Society for Vascular Surgery Guidelines catheter directed foam sclerotherapy with perivenous tumescent solution may be an option for saphenous vein incompetence treatment. According to the clinical experience, the use of tumescent solution application may be potentially useful also in other sclerotherapy indications, such as groin neovascularization, local aneurysmatic vein dilatation and perforator treatment. In the lecture on the basis of the clinical case presentation, the potential indications as well as TAS clinical efficacy and limitations will be discussed.

The use of TAS in the esthetic sclerotherapy, proposed by A. Ramelet in the management of the difficult and challenging to treat C1 cases may potentially increase not only feeding vein compression, but also improve the treatment outcome. The subdermal application of the tumescent solution before or after the foam and/or liquid sclerotherapy treatment results in the local venous hypertension decrease as well as in the vein emptying preservation at the level of the feeding vein or other C1 pathology. The use of TAS in the patients with difficult to treat C1 complex lesions and with hemodynamical (reflux related) matting is a valid alternative to the standard approach with low level of complication and significant therapeutic potential. On the basis of the clinical cases presentation the practical aspects of the TAS in the esthetic sclerotherapy will be demonstrated.

SP-12: Invited Lecture

History of Asian Venous Forum

Dong-Ik Kim
Sungkyunkwan University School of Medicine, Korea

It is a great honor to have the opportunity to compile the history of the Asian Venous Forum (AVF). However, since there are no official records prior to 2009, the account of this period is limited.

According to the author's recollection, before 2009, a few members of the Asian Society for Vascular Surgery (ASVS) held informal gatherings under the name AVF. Thus, this history focuses on the period from 2009 onward, when official records exist.

(Establishment and Early Years)

In 2009, during the ASVS meeting held in Busan, Korea, representatives from countries with active venous societies—such as Korea, Japan, China, and India—convened for the first official AVF meeting. Dr. Takehisa Iwai (Japan) was elected as the inaugural President, with Dr. Dong-Ik Kim (Korea) as Vice President, both serving three-year terms. It was decided that AVF would hold sessions within ASVS meetings until it could independently host its own congress.

During the 2012 ASVS meeting in Melbourne, Australia, the AVF council meeting took place. Dr. Dong-Ik Kim (Korea) was elected as the second President, Dr. Shoaib F. Padaria (India) as Vice President, Dr. Yew Pung Leong (Malaysia) as General Secretary, and Tomohiro Ogawa (Japan) as Treasurer. Attending national representatives included those from Bangladesh(Dr. Niaz Ahmed Choudhury), China(Dr. Yu-Qi wang), Hong Kong(Dr. Stephen Cheng), India(Dr. Malay D.Patel), Indonesia(Dr. Murnizal Dahlan), Japan(Dr. Takehisa Iwai, Dr. Tomohiro Ogawa, Dr. Makoto Mo), Malaysia(Dr. Yew Pung Leong, Dr. Ngoh Chin Liew), Philippines(Dr. Josefino I. Sanchez), Saudi Arabia(Dr. Mussaad Al-Salman), Singapore(Dr. Peter Robless), Korea(Dr. Dong-Ik Kim), Taiwan(Dr. Shoei-Shen Wang), Thailand(Dr. Kamphol Laohapensang, Dr. Pramook Mutirangura), Turkey(Dr. Ahmet Kursat Bozkurt), and United Arab Emirates(Dr. Ramesh Tripathi).

(Key Milestones and Leadership Transitions)

The 2013 ASVS meeting in Turkey approved the AVF constitution. In 2014, new participants joined, including Dr. Shen-ming Wang (China), Dr. Amr A. Gud (Egypt), Dr. Jamal J. Hoballah (Lebanon), Dr. Louay Altarazi (Syria), and Dr. Abdulkarim Al-Ameri (Yemen).

In 2015, Dr. Yew Pung Leong (Malaysia) became the third President, with Dr. Shen-ming Wang (China) as Vice President, Dr. Ahmet Kursat Bozkurt (Turkey) as General Secretary, and Dr. Tomohiro Ogawa (Japan) as Treasurer. New attendees included Dr. Sriram Narayanan (Singapore) and Dr. Sandeep Raj Pandey (Nepal).

In 2017, under Dr. Shen-Ming Wang's organization, AVF held a session during CVS 2017 in Zhengzhou, China. The fourth President in 2018 was Dr. Shen-Ming Wang (China), with Dr. Tomohiro Ogawa (Japan) as Vice President and Dr. Sriram Narayanan (Singapore) as General Secretary.

(Recent Developments)

In 2024, Dr. Sriram Narayanan (Singapore) was elected as the fifth President, Dr. Tomohiro Ogawa (Japan) as Vice President, and Dr. Ravul Jindal (India) as General Secretary. The council decided to hold independent AVF congresses biennially, starting in Japan in 2026, with Korea tentatively scheduled for 2028.

As of 2025, AVF member countries include Bangladesh, China, Hong Kong, India, Indonesia, Japan, Korea, Nepal, Malaysia, Saudi Arabia, Singapore, Taiwan, Thailand, and Turkey. The current AVF logo was designed by the first President, Dr. Takehisa Iwai, though discussions for a new logo have been ongoing for years.

(Closing Remarks)

I am always grateful for the dedication of the first President, Dr. Takehisa Iwai. As the second President, I made every effort, and I believe future officers will complete the unfinished achievements. Given the broad scope of venous medicine and active societies across Asia, AVF will achieve global recognition through collaboration with the American Venous Forum and European Venous Forum.

SP-13: Invited Lecture

Treatment Practices of Varicose Veins in Bangladesh: Impact of Minimally Invasive Technologies

Niaz Ahmed Choudhury[1,3], Abul Hasan Muhammad Bashar[2,3],

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Objective:

To define the changing trend in the treatment practices of varicose veins in a developing country with a large population.

Methods:

A total of 542 patients with varicose veins were treated by surgical and endovenous techniques over a period of 5 years between January 2020 through December 2025. Open surgical operation was performed in 336 patients and endovenous technique was used in 206. Endovenous techniques included endovenous laser ablation (EVLA) and Radio-frequency ablation (RFA). Data were analyzed on an annual basis to identify the trend in treatment practices.

Results:

In the first 2 years of the study period (2020-2022), open surgery clearly dominated the varicose vein treatment practices though endovenous technologies were already available in the country. This started to change in 2023 when endovenous techniques made significant strides to match open surgery. Varicose vein surgery took a big dip during the Covid-19 pandemic. However, this was an era when endovenous technique sealed its dominance over the open surgical technique.

Conclusion:

While the minimally invasive nature of endovenous procedures is appealing, affordability is one of the major variables determining treatment choices for varicose veins in the developing countries. In these countries where hospital and personnel cost are relatively low, newer and more hardware-intensive endovenous techniques were generally more expensive compared with open surgery. With socio-economic progress, however, this seems to be changing in favor of endovenous procedures. Today, a patient with uncomplicated varicose vein is more likely to be treated by endovenous rather than open surgical means in Bangladesh.

AS-1 The American Venous Forum: Our Mission, Our Impact, Our Future

John Forbes
American Venous Forum, USA

The American Venous Forum (AVF) is a global medical specialty society dedicated to the health of patients impacted by venous and lymphatic diseases. We pursue this mission through research, education, the development of evidence-based clinical practice guidelines, and advocacy efforts with governmental agencies, payers, and key stakeholders.

The AVF is governed by a 15-member Board of Directors who provide strategic direction, fiduciary control, and operational leadership to the organization by overseeing 21 committees and a professional staff who support a global network of over 1,000 members. What distinguishes the AVF from many professional societies is its uniquely collaborative and multidisciplinary structure, bringing together researchers, clinicians, educators, and industry professionals in a culture prioritizing in scientific rigor, mentorship, and innovation. Our core values are embodied in the acronym VEINS: Values and integrity; Equity and diversity; Inclusivity and growth; Nurturing and mentoring; Scientific excellence and research. Our International Committee, comprised of world-renowned leaders from 15 different countries, is at the forefront of venous and lymphatic care on the global stage. Our commitment to international relationships, collaborations, and partnerships is a priority and encompasses our core values VEINS.

A primary strength of the AVF is its robust educational ecosystem including the Journal of Vascular Surgery – Venous and Lymphatic Disorders, our video library found in the AVF Academy, our Vein Specialist newsletter, and our trainee programming offered annually during the Venous Early Career Course. We invite our Asian colleagues to attend the Annual Meeting of the American Venous Forum which will take place February 27 to March 2, 2027 in Nashville, Tennessee.

The AVF is considered one of the world's authorities in developing and disseminating clinical practice guidelines. We do this in collaboration with other organizations and welcome partnerships with international societies. Following our recent publication on Upper Extremity Deep Vein Thrombosis, we are currently advancing three important guidelines projects: Venous Leg Ulcers, the Management of Lymphedema in the lower extremities, and Venous Thromboembolism.

By collaborating with our international colleagues and sharing knowledge, AVF's research initiatives have been instrumental in advancing the scientific understanding of venous diseases and continue to have a profound influence on global standards of care.

Venous and lymphatic diseases knows no geographical boundaries. With over 20 percent of our membership residing outside the United States, the AVF is truly a global community. We are very proud of this and believe the experience, insights, and leadership of this diverse membership make our organization more relevant and impactful. We recognize the contributions of our Asian colleagues and would like to extend a warm welcome for increased collaboration – as partners, contributors, and members. Together, we can shape the future of modern venous and lymphatic care and reduce the economic, emotional, and physical burden experienced by patients everywhere.

The AVF is very excited for the opportunity to participate in providing abstracts for the Asian Venous Forum meeting and we look forward to a mutually beneficial relationship.

AS-2 Novel Adjuvant Therapies for C6 Chronic Venous Disease

Ruth Bush
John Sealy School of Medicine, University of Texas Medical Branch, USA

C6 chronic venous disease, defined by active venous ulceration, remains a significant clinical challenge due to delayed healing, high recurrence rates, and poor quality of life despite standard therapies such as compression, wound care, and treatment of superficial reflux. These limitations highlight the need for targeted adjuvant strategies that address the underlying inflammatory and microvascular dysfunction driving poor wound healing.

This presentation will provide a focused overview of novel adjunctive therapies for C6 disease. Pharmacologic options, including venoactive and anti-inflammatory agents, will be briefly reviewed for their potential to modulate endothelial dysfunction. Advances in wound care—such as bioengineered skin substitutes and extracellular matrix–based therapies—will be discussed in the context of accelerating healing. In addition, procedural adjuncts including intermittent pneumatic compression, negative pressure wound therapy, oxygen therapy, and treatment of deep venous obstruction with iliac vein stenting will be highlighted as part of a multimodal approach. Clinicians will receive guidance on how to practically integrate these therapies into clinical workflows, with attention to patient selection and timing to optimize outcomes for patients with advanced venous disease.

AS-3 Venous Stent Placement: Patient Selection - Who, What, and When

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Currently, five stents with venous indications have been approved by U.S. Food and Drug Administration: Abre (Medtronic), Venovo (BD, Becton Dickinson), Wallstent (Boston Scientific), Zilver Vena (Cook), and Fortegra (Gore). Several stents are or will be available in Asia. Successful outcomes depend on precise patient selection across several distinct venous pathologies. The most common condition treated with venous stent is a Nonthrombotic Iliac Vein Lesion (NIVL). The best known example of NIVL is the May Thurner Syndrome (MTS) which is compression of the left common iliac vein (CIV) by the crossing right common iliac artery. NIVL is typically a focal stenosis and the most common location is the left CIV. Our experience showed 40% of patients with MTS have a concurrent stenosis in the ipsilateral external iliac vein or a contralateral iliac vein. A chronic iliac vein stenosis from a remote deep vein thrombosis (DVT), characterized by a more diffuse stenosis, is another indication for venous stent placement. We observed 15% of MTS patients have a proximal compression stenosis concurrent with a distal & diffuse stenosis from a remote DVT. Inferior vena cava (IVC) stenosis warranting stent placement is uncommon and most commonly caused by a thrombosed IVC filter and less frequently from a malignant tumor. Acute DVT of the iliac vein is another indication for venous stent placement. Catheter thrombectomy is undertaken first and stent placement is performed selectively only when vessel patency cannot be restored with thrombectomy alone. Renal vein stent placement is performed most commonly for Nutcracker syndrome, where the renal vein is compressed between the superior mesenteric artery and aorta. Renal vein stent placement is technically a more difficult procedure with less well defined indications and outcomes. Subclavian vein stent placement in thoracic outlet syndrome is performed infrequently because stent patency may be difficult to maintain long term in the setting of bone bone compression. Mean age of our vein stent patients is 52 years with a slight preponderance of females. The critical threshold for intervention is the presence of severe, persistent symptoms that remain refractory to conservative medical management. Conclusions: With an expanding armamentarium of venous-dedicated stents, there are patients with distinct venous pathologies who may benefit from stent placement.

AS-4 Introducing an Innovative Venous Valve Design

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Egypt & Africa Vein and Lymph Association (EAVLA), Egypt

Background: Chronic venous insufficiency (CVI) remains a significant cause of morbidity worldwide, and current venous valve substitutes have not consistently replicated native valve biomechanics. Limitations of existing devices include thrombogenic surfaces, rigid leaflet behavior, and suboptimal hemodynamics under low venous pressure. There is a continuing need for a functional, durable, and physiologically responsive venous valve capable of restoring unidirectional flow and reducing venous hypertension.

Objective: To introduce and evaluate a novel biomimetic venous valve design that closely reproduces native structure and function through advanced engineering and computational modeling.

Methods: A new valve construct was developed using high-resolution anatomical data to generate a biomimetic leaflet geometry designed to open and close under minimal pressure gradients. The design underwent computational fluid dynamics (CFD) analysis to assess velocity fields, shear stress distribution, vortex behavior, and flow reflux across a range of physiologic conditions. Prototypes were manufactured using biocompatible elastomeric materials and incorporated into a pulsatile venous flow circuit. Bench testing assessed opening kinetics, closure competence, backflow resistance, and durability during repetitive cyclic loading.

Results: CFD modeling demonstrated streamlined forward flow with reduced stagnation zones, physiologic shear stress patterns, and rapid leaflet response to low-pressure changes. Prototype testing showed complete valve closure with minimal reflux, consistent opening at physiologic venous pressures, and stable leaflet motion through extended cyclical testing. An acute animal experiment demonstrated successful percutaneous deployment, valve patency, and competence, as evaluated by fluoroscopy.

Conclusion: This innovative biomimetic venous valve demonstrates promising functional and hemodynamic characteristics in both computational and bench-top evaluations and acute animal experiments. The design's physiologic responsiveness and low profile suggest its potential as a next-generation solution for CVI. Further preclinical testing is warranted to validate long-term durability and clinical applicability.

AS-5

Non rotational mechano-chemical ablation of the saphenous vein – when? and how?

Tomasz Urbanek

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Mechano-chemical ablation is one of the techniques with potential in the field of truncal vein incompetence treatment. According to the 2022 European Society for Vascular Surgery Guidelines, Saphenous ablation by mechano-chemical ablation received a class IIB recommendation and may be considered when a non-thermal non-tumescent technique is preferred. Looking into the local effects of mechano-chemical ablation, the vein spasm induction, sclerosing agent volume decrease, better drug penetration, transmural cell death and vein lumen fibrosis may be expected. From the clinical point of view, the following advantages should be emphasized: the lack of thermal energy application, no need for tumescent anesthesia and the possibility of implementation in the locations where the thermal techniques are usually not applicable.

There is still no golden standard for the mechano-chemical ablation. Among the available devices at least two options are available: a rotational mechanism and liquid sclerosing agent administration-based technique (Clarivein, Merit Medical) or a non-rotational and foam sclerosing agent administration-based method (Flebogrif, Balton). The Flebogrif catheter is a 6Fr OTW system, dedicated to the Saphenous Vein ablation. The catheter is equipped with a cutting element consisting of five retractable, branching arms arranged circumferentially and designed to scratch the inner wall of the vein. The mechanism of action is related to the strong contraction of the vein caused by its mechanical irritation and to the injury of the internal layer of the vein wall, with the local sclerosing foam administration during catheter pull-back. The length of the catheter (up to 90 cm) allows the treatment of the long incompetent venous segment including the patients with ankle level saphenous reflux. An effective vein shrinking allows a significant foam volume decrease, increasing the procedure safety, as well as extending the possibilities of the standard ultrasound guided foam sclerotherapy. In the presentation, on the basis of the clinical cases, the practical implementation of the non-rotational mechano-chemical ablation will be discussed and also the results of the polish multicenter observational prospective study will be presented. In the study 200 patients with Great Saphenous vein (GSV) incompetence were recruited (GSV diameter in the range 4-10 mm). In all the patients, the Flebogrif catheter mechano-chemical ablation was performed (mean length of the treated GSV 44.6 cm in the range from 20 to 70 cm). The mean foam volume (3% polidocanol) used in the study was 8.69 ml and in 87.5% of the patients the volume not exceeding 10 ml was used. In the 12 and 24month follow up, the rate of the GSVs without reflux was 90.6% and 89% respectively. No serious adverse events were noticed during the procedure performance.

The non rotational mechano - chemical ablation is a valid alternative in the armamentaria of the non-thermal non-tumescent saphenous ablation methods, potentially essential for some anatomical and clinical situation.

AT-1

2D Phase-Contrast MRV in Phlebology: The Taiwan Experience

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Background
Since 2017, our institution has pioneered the development of objective venous imaging utilizing 2D Phase-Contrast (PC) MRI. By 2019, this modality became a standardized pre-interventional routine. This technique allows for a comprehensive evaluation of venous status from the diaphragm to the toes without the requirement of contrast media or exposure to ionizing radiation.
Methods
Between May 2017 and February 2026, 1,037 subjects underwent 2D PC MRI integrated with QFlow analysis. The clinical scope encompassed:
Superficial venous interventions of the lower extremities.
Management of static leg ulcers and venous recurrence.
Pelvic Venous Disorders (PeVD).
Pre- and post-interventional hemodynamic evaluations.
Male-specific venous pathologies.
Results
Our data indicates a significant learning curve, requiring approximately 100 cases of operative experience to achieve stabilized, reliable data. Furthermore, experience, talent radiologist technicians are essential for accurate QFlow analysis. Since 2023, our focus expanded significantly into pelvic venous pathology, shifting the clinical perspective from the lower extremities to more proximal structures. Through technical optimization, the following protocols have become clinically indispensable:
3D Reconstruction: Visualizing the Left Ovarian Vein (LOV), Internal Iliac Vein (IIV), Renal Vein, and pelvic leaks.
CT-like Sequences: Utilizing Coronal FSE STIR for anatomical mapping.
Venous Compression Modeling: Specialized sagittal sections and Axial BTFE to identify May-Thurner Syndrome and other obstructive patterns.
Hemodynamics: Utilizing QFlow to identify pelvic leak points for SVP (Symptoms-Varices-Pathophysiology) classification.
A Applications of Pelvic Congestion Syndrome (PCS) post-LOV embolization is included in this speech.
Conclusion
2D PC MRV is a novel and transformative tool in phlebology that has significantly enhanced the efficacy of venous treatments. While applications for leg varices, venous ulcers, May-Thurner Syndrome (MTS), and LOV pathologies are now mature, we are actively expanding into emerging fields, including male venous disorders, spinal venous plexuses, hemorrhoidal disease, internal iliac venous disease, and the portal system.
This diagnostic "telescope" not only improves therapeutic outcomes but also broadens our understanding of complex venous anatomy. See Clearer, More Questions!
Key Words: 2D Phase-Contrast MRV, QFlow, Pelvic Venous Disorder, Non-contrast MRI, Phlebology, Taiwan Experience

AT-2

IVUS in management of May-Thurner syndrome

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BACKGROUND: May-Thurner syndrome, increasingly described within the broader spectrum of non-thrombotic iliac vein lesions (NIVL), is an under-recognized cause of chronic venous hypertension, limb swelling, venous claudication, pelvic venous symptoms, and iliofemoral deep vein thrombosis. Contemporary consensus statements and chronic venous disease guidelines emphasize careful patient selection and objective confirmation of clinically significant iliac venous obstruction before intervention. Intravascular ultrasound (IVUS) has emerged as the reference intraprocedural imaging modality because planar venography may underestimate lesion severity, length, confluence involvement, and optimal stent landing zones.

METHODS: This presentation synthesizes current guideline recommendations and pivotal literature on IVUS-guided evaluation and treatment of May-Thurner syndrome. The proposed workflow includes clinical phenotyping, duplex ultrasound and cross-sectional venous imaging when appropriate, diagnostic venography with IVUS, quantitative assessment of luminal area reduction, lesion morphology, inflow and outflow, stent sizing and positioning, post-dilation, and IVUS confirmation of expansion and wall apposition.

RESULTS: Evidence from the VIDIO trial and subsequent practice reports demonstrates that IVUS detects more clinically relevant iliofemoral obstruction than venography and frequently changes treatment strategy. For symptomatic patients with concordant clinical findings and significant iliac venous obstruction, endovascular reconstruction with dedicated self-expanding venous stents provides high technical success, symptom improvement, and acceptable mid-term patency, particularly in non-thrombotic disease. IVUS improves procedural precision by defining the iliocaval confluence, avoiding geographic miss, guiding adequate stent diameter and length, and identifying residual compression, recoil, or edge stenosis after deployment.

DISCUSSION: IVUS should be integrated as a decision-making and quality-control tool rather than a confirmatory adjunct alone. Its greatest value is matching anatomy to symptoms, preventing under-treatment and over-stenting, and standardizing endpoints for durable venous reconstruction. Remaining gaps include validated stenosis thresholds, antithrombotic strategy after stenting, surveillance protocols, and comparative outcome data in Asian populations.

AT-3

Management of Iliofemoral Deep Vein Thrombosis with Mechanical Thrombectomy, IVUS Guidance, and Venous Stenting

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BACKGROUND: Iliofemoral deep vein thrombosis (IFDVT) is associated with significant morbidity, including post-thrombotic syndrome (PTS), recurrent venous thromboembolism, and impaired quality of life. Although anticoagulation remains the standard therapy, endovascular intervention has emerged as an important strategy for rapid thrombus removal and restoration of venous patency.

METHODS: This presentation reviews contemporary evidence and practical experience regarding the use of mechanical thrombectomy, intravascular ultrasound (IVUS), and venous stenting in the management of acute and subacute IFDVT. Current indications, procedural strategies, and technical considerations are discussed, with emphasis on patient selection and optimization of venous reconstruction.

RESULTS: Mechanical thrombectomy enables effective thrombus debulking with reduced thrombolytic exposure and lower bleeding risk compared with conventional catheter-directed thrombolysis. IVUS provides superior visualization of iliac vein compression, residual stenosis, and chronic fibrotic obstruction compared with venography alone, allowing accurate lesion assessment and stent sizing. In patients with underlying iliac vein obstruction, venous stenting restores outflow and improves long-term patency. Recent studies have demonstrated favorable technical success, symptom relief, and reduction in post-thrombotic complications following IVUS-guided intervention.

DISCUSSION: The combination of mechanical thrombectomy, IVUS guidance, and dedicated venous stenting represents an evolving endovascular approach for selected patients with IFDVT. Appropriate patient selection, adequate inflow restoration, and precise IVUS-guided stent deployment are essential for optimal outcomes. This presentation highlights contemporary strategies and evidence-based approaches for improving venous patency and minimizing long-term sequelae in patients with iliofemoral DVT.

AT-4

IVUS in the management of post-thrombotic syndrome

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Background
Post-thrombotic syndrome (PTS) is a chronic, often debilitating condition that develops in 20%-50% of patients following a deep vein thrombosis (DVT).

Methods
IVUS use in the management of PTS (inflow evaluation, landing zone evaluation and stent size selection)

Results
Surgical outcomes (primary patency, secondary patency) are analyzed.

Conclusion
Stenting is safe and effective in the setting of chronic ilio-femoral vein occlusion. IVUS is an important adjunct for iliac vein stenting in the setting of chronic iliac vein occlusion.

AT-5

Evolution and Current Status of Catheter-Based Interventions for Acute Deep Vein Thrombosis in Japan

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In Japan, catheter-based treatment for acute deep vein thrombosis (DVT) has traditionally been based on catheter-directed thrombolysis (CDT). However, owing to a shortage of urokinase, manual aspiration thrombectomy (MAT) has been reconsidered as an alternative treatment option. Furthermore, the absence of dedicated venous stents previously required the off-label use of arterial stents, limiting optimal endovascular therapy.

At our institution, MAT resulted in a significant reduction in thrombus burden, as evaluated by the venographic segment score, which improved from 23.4 ± 10.6 to 9.6 ± 5.6 ($p < 0.01$). However, post-thrombotic syndrome developed in approximately 33% of patients, suggesting the limitations of conventional treatment strategies.

Since 2024, mechanical thrombectomy devices, including the Inari ClotTriever and Penumbra CAT8 systems, and dedicated venous stents, such as the BD Venovo, have become available in Japan. These developments have led to major changes in the treatment of venous diseases by expanding therapeutic options and improving thrombus removal and venous reconstruction.

As of April 2026, we have gained initial experience with these new devices, including four cases treated with CAT8, 20 cases with ClotTriever, and 12 cases with Venovo stents. Based on our clinical experience, this presentation summarises the evolution and current status of catheter-based interventions for DVT in Japan and discusses future perspectives in this field.

AT-6

Single-Center Experience and Future Challenges of Venous Intervention Using Novel Devices

Yasuhiro Tanabe
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Background:
Since December 2024, mechanical thrombectomy devices (Inari ClotTriever, Penumbra CAT8) and venous stents (BD Venovo) have been introduced in Japan.
Methods:
We retrospectively analyzed patients with acute deep vein thrombosis (DVT) who were treated using these novel devices between April and December 2025.
Results:
A total of 14 patients (7 males and 7 females) with a mean age of 66.5 ± 12.2 years were included. The median duration from symptom onset to catheter intervention was 18.0 (14.0–32.5) days, and from initiation of anticoagulation to intervention was 16.5 (8.5–30.5) days. All patients had iliac vein compression syndrome. Preoperative rVCSS pain score was 2.7 ± 0.5, and Villalta score was 16.7 ± 3.1.
One patient required catheter-directed thrombolysis (CDT) due to thrombus extension into the inferior vena cava. In the remaining 13 patients, thrombectomy was performed using ClotTriever system. The residual stenosis was treated with stent-implantation (Venovo in 13, arterial stent in 1). Successful revascularization was achieved in all cases. The calf circumferences improved from 39.1 ± 5.0 cm preoperatively to 34.7 ± 2.9 cm on postoperative day 1. Patients were discharged after a median of 3.5 (2.0–5.3) days. Patients requiring two stents (n = 5) had a significantly longer duration from symptom onset to intervention compared to those treated with a single stent (n = 9) (40.0 [23.0–73.0] vs. 16.0 [13.0–22.5] days, P = 0.012).
Discussion:
At our institution, interventions are primarily performed in patients with DVT refractory to anticoagulation therapy, which may explain the longer duration from symptom onset to intervention compared to the CLOUT Registry. Earlier intervention may not only facilitate more rapid symptom improvement but also reduce procedural complexity. Further evidence is needed, including optimal strategies for discontinuation of antithrombotic therapy in patients with lower risk of recurrences during the chronic phase.

IS-1-1 Demonstration of Pressure Gradient Reduction by Collateral Venous Occlusion in Nutcracker Syndrome

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Background: Nutcracker syndrome (NCS) is caused by compression of the left renal vein (LRV), most commonly between the abdominal aorta and the superior mesenteric artery, resulting in hematuria and pelvic venous congestion. We report an atypical case of NCS caused by LRV compression at the level of the portal vein.

Methods: A 63-year-old woman presented with chronic left lower abdominal pain. Contrast-enhanced computed tomography (CT), selective venography, and pressure measurements were performed to evaluate venous anatomy and renocaval hemodynamics. Temporary balloon occlusion of the left ovarian vein was additionally performed during repeat pressure measurements to assess the influence of collateral venous drainage.

Results: CT demonstrated a left ovarian varix. The aortomesenteric distance was preserved at 7.8 mm, whereas the portal vein–aorta distance was reduced to 4.6 mm, with marked flattening of the LRV. Venography demonstrated severe reflux into the dilated left ovarian vein with minimal antegrade drainage into the inferior vena cava (IVC). Initial pressure measurements revealed 8 mmHg in the distal LRV, 9 mmHg in the left ovarian vein, and 6 mmHg in the IVC, failing to demonstrate the diagnostic renocaval pressure gradient of ≥3 mmHg. Because collateral drainage through the ovarian vein was considered to decompress the LRV, temporary balloon occlusion of the ovarian vein was performed. Distal LRV pressure subsequently increased to 10 mmHg, demonstrating a renocaval pressure gradient of 4.8 mmHg across the stenotic segment.

Discussion: In patients with well-developed collateral venous drainage, decompression through the ovarian vein may mask the true hemodynamic severity of NCS by reducing the renocaval pressure gradient. Temporary balloon occlusion of the collateral pathway can unmask the true pressure gradient and facilitate demonstration of the hemodynamic significance of LRV compression. This technique may serve as a useful adjunctive maneuver in selected patients with suspected NCS and predominant collateral outflow.

IS-1-2 Pelvic Congestion Syndrome, an overlooked cause of leg venous insufficiency: an Indonesian experience

Ardy Limengka

Mayapada Hospital Kuningan, Jakarta, and Beyoutiful Aesthetic Center, at T-Space Bintaro, Indonesia

Pelvic Congestion Syndrome (PCS) is a frequently overlooked cause of chronic pelvic pain and lower extremity varicose veins. While it accounts for 20% of gynecological consultations, limited awareness means only 40% of these patients reach the necessary specialists. In many cases, venous reflux originates in the pelvis and "escapes" into the legs, leading patients to seek treatment for leg veins while the underlying pelvic source remains untreated.

Despite the scarcity of PCS expertise in Indonesia, Mayapada Hospital Kuningan recently treated 15 patients in a single year, the highest known national volume. Notably, two patients with history of varicose vein ablation at other hospitals presented with rapid recurrence of leg varicosities within one year due to undetected underlying PCS. Following targeted endovascular embolization of the PCS and retreatment of the leg veins, both patients achieved durable clinical success with and complete resolution of chronic pelvic pain.

While current treatment volumes in Indonesia are below epidemiological expectations, these successful outcomes prove the necessity of a new clinical approach. Vascular surgeons and phlebologists must maintain a high index of suspicion for PCS, especially in cases of early recurrence to ensure comprehensive and durable patient cares.

IS-1-3 Site-Specific Differences in Genetic Mutation Detection in Vascular Malformations with Tissue Overgrowth: What Is the Optimal Specimen for Genetic Testing?

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Background

Molecular targeted therapies for intractable vascular diseases, such as Klippel-Trenaunay Syndrome (KTS) and Parkes Weber Syndrome (PWS), heavily rely on genetic testing. Because these conditions are driven by mosaic somatic mutations, mutation loads vary across different tissue sites. This study investigates the optimal sampling sites?hypertrophic tissue versus specific vascular malformations-for precise genetic diagnosis.

Methods

We evaluated 16 patients with vascular malformations accompanied by tissue hypertrophy treated between April 2023 and October 2025: 11 with KTS, 2 with PWS, and 3 with Extended Venous Malformation (Ex-VM). Two plastic surgeons collected paired samples from both hypertrophic tissues and vascular lesions from each patient. Genetic analysis was conducted using the AmpliSeq for Illumina Cancer Hotspot Panel v2. For KTS patients, specimens were separately collected from hypertrophic tissue, venous malformations (VM), and capillary malformations (CM).

Results

In the KTS cohort, PIK3CA mutations were detected in 8 of 11 patients (72.7%), with 5 cases (62.5%) harboring hotspot mutations. Among these 8 mutation-positive cases, the genetic variants were consistently identified in all CM and hypertrophic tissue samples, whereas no mutations were detected in the corresponding VM samples from the same individuals. For the PWS cohort, PIK3CA mutations were absent in both patients, but KRAS mutations were identified instead, with one case successfully yielding the mutation from both hypertrophic tissue and vascular lesions. In the Ex-VM cohort, no PIK3CA mutations were detected in either hypertrophic tissue or vascular lesions across all three cases.

Conclusion

In KTS, hypertrophic tissue and CM are reliable sources for identifying somatic mutations, whereas VM lesions are suboptimal due to lower detection rates. This variation suggests that VM components in KTS might arise from distinct genetic or embryological lineages. Conversely, in PWS, mutations may be consistently identified in both vascular and hypertrophic tissues, despite the unexpected finding of KRAS variants.

IS-1-4

Initial Outcomes of Sclerotherapy Using Bleomycin for Venous Malformations Refractory to Polidocanol and Ethanol

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Background:
A subset of venous malformations (VMs) shows an insufficient response to sclerotherapy with polidocanol or ethanol. Although bleomycin is not commonly used as a first-line sclerosant, it may be effective in cases refractory to other sclerosants. This study evaluated the outcomes of bleomycin-containing sclerotherapy for VMs refractory to polidocanol and/or ethanol sclerotherapy.
Methods:
This retrospective study included 22 patients with VMs who underwent 40 bleomycin-containing sclerotherapy sessions at our institution between April 2007 and March 2026 after being judged refractory to polidocanol or ethanol sclerotherapy. Refractoriness was defined as no symptomatic improvement or symptom recurrence within 2 years despite initial improvement. The primary outcome was the symptomatic response rate after the first bleomycin-containing session. Secondary outcomes included adverse events and long-term outcomes.
Results:
The median age at bleomycin introduction was 21 years (range, 1-64). Lesion locations were the head and neck in 12 patients, upper extremity in 2, lower extremity in 7, and trunk in 1. The median number of prior sclerotherapy sessions was 2.5. All patients had previously received polidocanol, and 5 had received ethanol. The symptomatic response rate after the first bleomycin-containing session was 77%, including complete symptom resolution in 18% and partial improvement in 59%. The mean number of bleomycin-containing sessions was 1.8, and the mean cumulative bleomycin dose was 15.7 mg. Transient postprocedural swelling, considered an expected reaction, occurred in all cases. Adverse events occurred in 4 of 40 sessions and were all class 2 or lower according to the Society of Interventional Radiology Adverse Event Classification System. No pulmonary fibrosis was observed. Only two patients transitioned to other treatments during follow-up.
Discussion:
Bleomycin-containing sclerotherapy may provide symptomatic benefit in selected patients with VMs refractory to polidocanol and ethanol sclerotherapy, possibly through an endothelial injury mechanism distinct from those of these agents.

IS-1-7

The Palma Procedure as a Salvage Strategy for Chronic Iliac Venous Occlusion Not Amenable to Endovascular Therapy: A Case Series

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Purpose

To highlight the continued relevance of the Palma procedure as a salvage strategy for patients with chronic iliac venous occlusion when endovascular therapy is unsuccessful or technically infeasible.

Methods

We report three-case series of patients with symptomatic chronic unilateral iliac vein obstruction. The first patient was a 69-year-old man with right lower limb pain and swelling, femoropopliteal deep vein thrombosis, and suspected right-sided MTS variant after prior venoplasty and stenting. The second was a 42-year-old woman with total right common iliac vein occlusion after prior iliac venous intervention. Patient 3 was a 55-year-old woman with May–Thurner syndrome and chronic left iliac vein occlusion with collateral formation. Endovascular approaches, including venography, thrombectomy, intravascular ultrasound, and venoplasty, were unsuccessful or not feasible due to chronic total occlusion and technical limitations. All patients subsequently underwent femorofemoral bypass using the Palma procedure with either autologous great saphenous vein or PTFE grafts.

Results

All procedures were successfully performed with satisfactory intraoperative graft flow and no immediate complications. Early postoperative imaging confirmed graft patency without thrombosis or anastomotic leakage, with clinical improvement. Published series have reported favorable mid to long-term patency for Palma bypass particularly when inflow and contralateral outflow are adequate, which remain stable compared with the declining long-term patency of venous stenting in post-thrombotic disease. Although endovascular therapy remains first-line, Palma bypass remains a practical salvage strategy when endovascular reconstruction is unsuccessful, technically infeasible, or constrained by access to dedicated venous devices and local reimbursement constraints.

Conclusions

The Palma procedure remains a valuable and durable alternative for patients with chronic iliac venous occlusion when endovascular therapy is unsuccessful or technically infeasible. It may offer durable clinical benefit and represents a practical option in resource-constrained settings where access to dedicated venous devices or repeated endovascular interventions is limited.

IS-1-8

Beyond the Saphenous System: A Case of Multi-segmental Varicose Recurrence and Chronic Ulceration Secondary to Occult Pelvic Venous Disorder

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Purpose: Recalcitrant lower extremity venous disease often indicates an underlying pelvic venous disorder. This report highlights a complex case of multi-segmental recurrence and chronic ulceration, emphasizing the importance of identifying pelvic escape points to prevent cycle-of-failure venous interventions when standard therapies fail.

Methods: A 67-year-old multiparous female (G7P5) presented with chronic left inguinal pain, bilateral leg varicosities, and persistent medial malleolar ulceration. Notably, the patient demonstrated high compliance with optimal medical treatment, including consistent use of compression stockings and venoactive drug. Despite conservative measures and subsequent surgical interventions, including cyanoacrylate glue ablation and ultrasound-guided foam sclerotherapy, the patient experienced rapid clinical relapse. Following the ESVS 2022 guidelines for persistent recurrence, the diagnostic focus shifted toward a systemic pelvic etiology.

Results: Evaluation using the SVP Classification system identified a complex pathophysiology S_3, V_3, $P_{BGV, PELV, R, NT}$. Inferior vena cava duplex ultrasound and CT venography confirmed dilated bilateral ovarian veins (right >6 mm) with continuous reflux and pelvic plexus insufficiency. These findings established the pelvic origin of the lower extremity varices. While the patient denied classic symptoms of dysmenorrhea and dyspareunia, she exhibited urinary incontinence, highlighting the diverse symptomatic spectrum of pelvic venous hypertension.

Conclusions: This case emphasizes that failure of optimal medical treatment and localized superficial ablations mandates comprehensive evaluation for a suspected pelvic source of reflux. Treating lower limb tributaries in the presence of unaddressed pelvic venous reflux leads to suboptimal long-term outcomes and frequent recurrence. Lastly, SVP framework provides the necessary diagnostic precision to transition from empirical treatments to targeted, long-term therapeutic success in patients with multi-level venous disease.

IS-2-1 Prevalence of iliocaval venous obstruction and calf muscle dysfunction in patients with venous leg ulcer assessed by air plethysmography

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OBJECTIVE – To evaluate the ability of air plethysmography (APG) to detect iliocaval venous obstruction (ICVO) and to compare its diagnostic performance with computed tomography venography (CTV), the current gold standard for ICVO assessment. Additionally, this study aimed to determine the prevalence of calf muscle dysfunction using APG.

METHODS – This cross-sectional study included patients with venous leg ulcer. All participants underwent APG to assess calf muscle pumping function and venous obstruction parameters, including outflow fraction (OF), venous drainage index (VDI), ejection fraction (EF), residual volume fraction (RVF), and venous filling index (VFI). CTV was served as the reference standard for the diagnosis of ICVO. The prevalence of calf muscle dysfunction and ICVO detected by APG was analyzed. Diagnostic performance of APG for detecting ICVO was evaluated by calculating sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and overall accuracy using CTV as the comparator.

RESULTS – A total of 62 patients were included in the analysis. Calf muscle pump dysfunction was identified by APG in 45 patients (72.6%). ICVO was confirmed by CTV in 28 patients (45.2%). When compared with CTV, APG demonstrated a sensitivity of 83.3%, specificity of 45.5%, PPV of 29.4%, NPV of 90.9%, and overall diagnostic accuracy of 53.6% for the detection of ICVO.

CONCLUSIONS – APG is a noninvasive modality capable of identifying calf muscle pump dysfunction and venous outflow abnormalities in patients with suspected ICVO. APG shows potential value as a screening or adjunctive diagnostic tool for ICVO when compared with CTV. Further studies are warranted to define its role in clinical decision-making and patient selection for advanced venous imaging or intervention.

IS-2-2 Endovenous laser ablation of the anterior saphenous vein

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BACKGROUND

The vein formerly known as the anterolateral branch of the Great Saphenous Vein(GSV) is now formally referred to as the Anterior Saphenous Vein(ASV). This shift in nomenclature reflects its increasing clinical importance in the field of venous disease. Reflux originating from the ASV is a cause of varicose veins.

METHODS

Between January 2, 2026, and March 31, 2026, I reviewed 50 cases of Endovenous Laser Ablation(EVLA) performed in my practice. Out of these, 4 cases were identified where varicose veins were caused specifically by ASV reflux.
I classified ASV-related reflux into two distinct patterns: 1) Isolated ASV reflux with no involvement of the GSV, 2) Complex reflux where ASV insufficiency drained into the GSV, leading to secondary reflux in the distal segment of the GSV.
Since the ASV wall is typically thinner than that of the GSV, a lower energy density was applied during EVLA. In cases involving Type 2 reflux, EVLA was performed on both the ASV and the affected distal segment of the GSV.

RESULTS

Complete occlusion was achieved in 100% of the cases where EVLA was performed on the ASV. No complications, such as skin burns or nerve injury, were observed in my practice.

DISCUSSION

Precise preoperative ultrasound mapping is essential; clinicians must evaluate the ASV alongside the GSV. If the ASV is dilated, its reflux must be rigorously checked.
Because the ASV often runs more superficially, closer to the skin, than the GSV, extra caution is required during EVLA. To prevent skin burns during EVLA, it is essential to inject a generous amount of tumescent solution.

IS-2-3 Early Outcomes of Nuvena, a New Cyanoacrylate Closure System, for the Treatment of Incompetent Saphenous Veins

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Background
The Nuvena system is a new cyanoacrylate closure system introduced in Korea. This study evaluated the early clinical outcomes of the Nuvena system in the treatment of incompetent saphenous veins.
Methods
This retrospective single-center study included 27 patients with 43 incompetent saphenous veins treated with the Nuvena system between December 2025 and March 2026. The primary outcomes were anatomical closure and the incidence of PLAR. Secondary outcomes included procedure-related adverse events, postoperative pain, time to resumption of normal activities, and changes in the revised Venous Clinical Severity Score (rVCSS) and Chronic Venous Insufficiency Quality of Life Questionnaire-14 (CIVIQ-14) score.
Results
The 1-month follow-up rate was 96.3%, and the mean follow-up duration was 34.7 days (range, 10-61 days). Ultrasound-confirmed anatomical closure was achieved in 100% of treated veins. No case of PLAR was observed. Four patients reported mild discomfort along the treated great saphenous vein without associated rash or pruritus, which resolved spontaneously without specific treatment in all cases. Hyperpigmentation along the treated saphenous vein occurred in one patient. No major adverse events were identified. Postoperative pain was minimal, the mean time to resumption of normal activities was 0.92 days, and rVCSS and CIVIQ-14 score improved significantly at 1 month.
Discussion
The Nuvena system showed favorable early outcomes, with no PLAR observed in this initial series. Differences in glue properties may have contributed to these finding. Further multicenter studies are warranted. Our longer follow-up is ongoing, and updated results will be presented at the meeting.

IS-2-4

Early result and complication of Face Sclerotherapy

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Objective

Sclerotherapy with polidocanol (Polidocanol) is considered an effective treatment applied to areas including varicose veins, esophageal varices. However, there have been no reports of being used for facial blood vessels in Japan. We modified the injection method, which was name as Face Sclerotherapy(FS). We report early clinical and patient satisfaction outcomes and complications at 7 months after intervention.

Methods

There were 502 patients (82.7%) underwent FS, while 607 patients came for counseling between February 2022 and December 2023. Patients had a mean age of 34 ± 12 years, 558 female/49 male. 34 G needle was used and the concentration of polidocanol was adjusted according to the condition of veins. Patients were reviewed at 1 month and 7 months. Postoperative results, Numerical Rating Scale (NRS) and patient satisfaction were recorded retrospectively in this study.

Results:

The sites of treated vessels: a. Around the nose198 cases (39.4%), b. Cheeks, 178 cases (35.5%), c. Below eyes 73 cases (14.5%), d. Temples 61 cases (12.2%), e. Eyelids 74 cases (14.7%), f. Forehead 22 cases (4.4%). There were 398 (79.3%) single-site cases, 104 (20.7%) multiple-site cases. About times of treatments, 203 (40.4%) for once, 241 (48.0%) for twice, 41 (8.2%) for three times, and 17 (3.4%) for over times. The mean treatment time was 13.3 ± 13.0 mins. The postoperative follow-up rate was 100%. Complication in follow-up period were pigmentation 0/502 (0.0%), neuropathy 0/502 (0.0%), allergy 5/502 (1.0%), and skin ulcer 1/502 (0.2%). Patient satisfaction score was 9.1, and NRS was 3.1.

Conclusion

Face sclerotherapy is an effective treatment for the veins on face when the indication is strictly selected. Early results are encouraging, but we await further prospective long-term follow-up from the study.

IS-2-5 New venoactive drug in chronic venous diseases treatment. Multicenter prospective study

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Introduction. The use of various venoactive drugs (VAD) is an integral part of the comprehensive treatment of patients with chronic venous diseases (CVD). It is known that the effectiveness of any drug, including VAD, depends on its bioavailability. Unfortunately, almost all of the VAD currently available on the market are very poorly soluble in water and have extremely low bioavailability (1-3%).

Aim. To evaluate the clinical efficacy of a new water-soluble biologically active supplement (BAS) that is the nano-flavonoid fraction (NaFF) consisting of the flavonoid hesperidin methyl chalcone, troxerutin and ascorbic acid in the complex treatment of patients with CVD of clinical classes C1–C3. Bioavailability of this nano-flavonoid fraction is 23.3%.

Materials and methods. The open, comparative multicenter, prospective study included 281 patients with CVD of clinical classes C1–C3. (Approved Medical ethics committee Petro State University protocol №4 -06.16.2023). The first (studied) group of patients included 158 people who received biologically active supplement NaFF for two months. The second (control) group consisted of 123 patients who did not receive biologically active supplement. In order to study the effectiveness of BAS sequentially during three patient visits, a statistical analysis of changes in quality of life according to the CIVIQ-2 questionnaire, pain intensity using a visual analog scale (VAS) and the dynamics of changes in malleolar volume (MV) on the target limb under study was performed.

Results. The results of the conducted studies have shown that the inclusion of a new biologically active supplement NAFF in the complex treatment of patients with CVD significantly reduces symptoms and improves the quality of life of patients. The maximum effectiveness of new biologically active supplement is manifested after 2 months of use in standard dosages without any side effects. The main advantage of the new biologically active supplement, unlike other VAD, is its complete solubility in water and, as a result, higher bioavailability, which amounted to 23.3% (nano-flavonoid fraction (NaFF)

Conclusions.

The results of the conducted studies have shown that the inclusion of a new biologically active supplement NAFF in the complex treatment of patients with CVD significantly reduces symptoms and improves the quality of life.

IS-2-6

Are Varicose Veins and Hemorrhoidal Disease Manifestations of a Systemic Venous Disorder? Evidence from a Nationwide Population-Based Cohort Study

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Purpose:

Varicose veins (VV) and hemorrhoidal disease (HD) may represent distinct manifestations of a systemic venous disorder; however, robust population-based evidence supporting this hypothesis remains scarce. This study aimed to investigate the bidirectional association between VV and HD using a nationwide cohort.

Methods:

A nationwide population-based cohort study was conducted using the Taiwan National Health Insurance Research Database (NHIRD) from 2005 to 2021, covering over 31 million beneficiaries. To evaluate the risk of VV in patients with HD, 832,310 individuals with HD were identified and propensity score-matched with individuals without HD. Cox proportional hazards models were used to estimate adjusted hazard ratios (HRs) and 95% confidence intervals (CIs). Conversely, 112,027 patients with VV were analyzed to assess the risk of developing HD using a similar approach.

Results:

HD was associated with an increased risk of VV (adjusted HR, 1.52; 95% CI: 1.47–1.57). Conversely, VV was associated with an increased risk of HD (adjusted HR, 1.50; 95% CI: 1.45–1.55). These associations were consistent across sex and age subgroups. Furthermore, patients with coexisting VV and HD exhibited significantly higher risks of mitral valve regurgitation ($P<0.001$), hernia ($P<0.001$), varicocele ($P = 0.008$), and mortality ($P = 0.006$).

Conclusions:

This nationwide cohort study demonstrates a significant bidirectional association between VV and HD, providing population-level evidence supporting a shared systemic venous and connective tissue pathophysiology. These findings extend beyond simple association and suggest clinically meaningful implications, including the need for heightened awareness, cross-condition evaluation, and more integrated management strategies in affected patients.

IS-2-7

Fast-Track Management of Truncal Reflux in Varicose Veins: A Real-World Experience of Cyanoacrylate Closure in a High-Efficiency Vein Clinic in Taiwan

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Purpose:

Minimally invasive endovenous treatments have transformed the management of varicose veins. Cyanoacrylate closure (CAC) offers the advantage of eliminating the need for tumescent anesthesia and postoperative compression. We aimed to evaluate a fast-track treatment strategy for truncal reflux in a real-world, high-volume vein clinic setting.

Methods:

We performed a retrospective descriptive analysis of consecutive patients undergoing CAC for truncal reflux across our clinic network in 2025. A streamlined care pathway was implemented, emphasizing same-day evaluation and treatment when feasible, avoidance of tumescent anesthesia, and no routine use of compression stockings. Key parameters included number of treated truncal veins, procedure time, and peri-procedural outcomes.

Results:

Approximately 500 cases were included. Both single and multiple truncal vein treatments were performed. Technical success was achieved in all cases. The mean procedure time was short, reflecting the efficiency of the fast-track protocol. The procedure was well tolerated without the need for tumescent anesthesia or general anesthesia. Notably, no postoperative compression stockings were required. Immediate return to normal ambulation was achieved in all patients. No major complications were observed.

Conclusions:

Fast-track CAC for truncal reflux is a feasible, efficient, and patient-friendly approach in real-world practice. The elimination of tumescent anesthesia and compression therapy, together with immediate ambulation, represents a simplified treatment paradigm that may improve patient experience while maintaining procedural safety. Further studies are warranted to confirm long-term outcomes.

IS-2-8

1mm Punch Incision: A Refined Approach to Microphlebectomy for Nonaxial Varicosities

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Purpose: In the management of CEAP C2+ varicose veins, excision of nonaxial varicosities is essential to prevent recurrence and postoperative thrombophlebitis. Traditional miniphlebectomy using a scalpel often requires incisions exceeding 5mm, necessitating sutures and resulting in suboptimal cosmetic outcomes. This study evaluates a refined microphlebectomy technique using a 1mm skin punch to optimize surgical efficiency and patient recovery.

Methods: A 1mm skin punch was utilized to create circular access points for the removal of nonaxial varicosities. Unlike linear scalpel incisions, the circular punch allows 360-degree maneuverability for venous hooks while minimizing deep tissue trauma. Following excision, the vein stumps were meticulously ligated with synthetic absorbable sutures to prevent hematoma. The 1mm wounds were left to heal naturally through primary and secondary contracture without the need for suturing.

Results: The punch-incision technique significantly reduced surgical trauma and eliminated the complexity of wound closure. Clinical observations demonstrated rapid healing with superior aesthetic results and near-invisible scarring. The combination of minimal incisions and secure stump ligation facilitated a seamless day-surgery workflow, ensuring low complication rates and high patient satisfaction.

Conclusions: The 1mm punch technique offers a technically superior and more aesthetic alternative to traditional scalpel-based microphlebectomy. Its simplicity, combined with enhanced surgical maneuverability and faster recovery, makes it an ideal approach for routine clinical practice in ambulatory venous interventions.

IS-2-9 Ultrasonographic venous abnormalities in CEAP C1 patients

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Objective:
The study aimed to investigate the ultrasonographic venous abnormalities in CEAP C1 patients and explore the relationship between venous abnormalities, vessel diameters, and patients' baseline characteristics.
Methods:
We prospectively collected data from patients with lower limb chronic venous disease, CEAP C1 classification, who underwent Doppler ultrasound at our institution between December 2022 and May 2023. Demographic data, including age, sex, weight, height, underlying non-communicable diseases (NCDs), including diabetes, hypertension, and dyslipidemia, long-standing hours per day, and vessel diameters, were collected. Patients were divided into reflux and non-reflux groups. The association between venous abnormalities, vessel diameters, and patients' baseline characteristics was analyzed by using correlation tests.
Results:
There were 94 participants, mean 44.9 (+ 13.4 SD) years. Eighty-eight (93.6%) were female. Eleven participants had 1 symptomatic limb; thus, a total of 177 limbs were assessed. In the 177 limbs assessed, refluxes were found in 25 (14.1%) limbs, including 2 (1.1%) limbs in deep veins, 11 (6.2%) limbs in superficial veins, 8 (4.5%) limbs in perforators, and 4 (2.3%) limbs in both great saphenous veins (GSV) and perforators. Perforator diameter ≥1.8 mm had a significant relationship with reflux ($p = .017$), while GSV diameter and patients' baseline characteristics had no relationship with venous reflux. No thrombosis or short saphenous vein abnormalities were shown in this study.
Conclusions:
Venous abnormalities were found in 14.1% of our CEAP C1 limbs. All were refluxes. Almost all of the refluxes occurred in superficial veins and/or perforators. There were no thromboses or abnormalities in the short saphenous vein. Perforator diameter ≥1.8 mm had a significant relationship with reflux ($p = .017$). Short saphenous vein examinations and the augmentation test in perforator veins with a diameter less than 1.8 mm can be omitted from the screening protocol for CEAP C1 patients to reduce examination time.

IS-2-10

Postoperative Outcomes of a Patient-Driven Strategy for Compression Stocking Use After Endovenous Thermal Ablation: A Prospective Observational Study

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Background
Little is known about the clinical consequences of allowing patients to determine their own course of compression therapy after endovenous ablation. This study evaluates whether a patient-driven strategy for compression stocking (CS) use affects postoperative pain, satisfaction, and quality-of-life outcomes.
Methods
From January to December 2024, a prospective observational study was conducted on 101 patients (151 limbs) with CEAP class 2 disease who underwent EVTA with or without phlebectomy. All patients wore class II CS for 12 hours postoperatively. A patient-driven strategy was then applied: patients individually decided whether to continue CS use for 7 days. The primary outcome was postoperative pain (VAS) at day 7 and 1 month. Secondary outcomes included CS satisfaction, overall procedural satisfaction, CIVIQ-14 scores, and complications (Figure 1).
Results
A total of 22 patients (33 limbs, 21.9%) elected to continue CS use (mean duration: 6 days), while 79 patients (118 limbs, 78%) chose not to continue (mean duration: 1 day). CS-related discomfort—including itching, erythema, and tightness—was comparable between groups. Despite this, satisfaction with CS use was significantly higher in the CS group than in the non-CS group (6.0 vs. 1.2, $p < .001$). The duration of CS use during the first postoperative week showed a positive correlation with satisfaction scores (0–10 scale) at both 1 week ($r = 0.464$, $p < .001$) and 1 month ($r = 0.414$, $p < .001$). VAS pain scores at 7 days (1.9 ± 2.2 vs. 1.5 ± 1.7, $p = 0.56$) and 1 month (0.9 ± 1.6 vs. 0.9 ± 1.2, $p = 0.90$) were not significantly different between groups. Likewise, CIVIQ-14 scores, truncal vein occlusion rates, complication rates, and analgesic use showed no significant differences (all p = NS).
Repeated-measures ANCOVA adjusting for sex and baseline symptom severity demonstrated a significant overall reduction in pain over time ($F = 26.382$, $p < .001$), but no significant interaction was observed between CS use and the pain trajectory ($F = 2.161$, $p = 0.117$; Figure 2).
Conclusion
Our findings suggest that a patient-driven approach to compression therapy, while enhancing satisfaction for users, does not compromise clinical efficacy or recovery. These results advocate for a flexible, preference-based strategy over a rigid, uniform compression protocol in the postoperative management of chronic venous disease.

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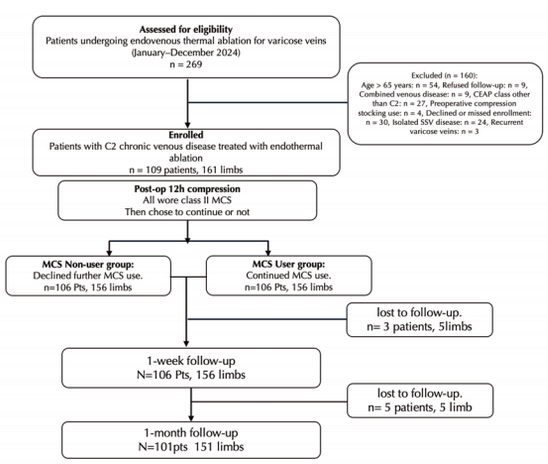

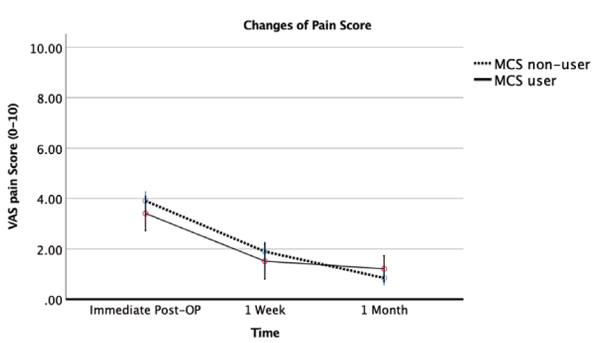

IS-3-1

Deep learning-based identification of skin lesions associated with chronic venous insufficiency in biopsy-proven dermoscopic images

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Chronic venous insufficiency (CVI) is frequently accompanied by various lower-extremity skin lesions that can be challenging to distinguish from other dermatologic or systemic inflammatory conditions. This study proposes a deep learning-based, non-invasive approach for classifying CVI-related skin diseases using dermoscopic images. A total of 677 dermoscopic images from 248 patients with histopathologically confirmed diagnoses were collected and retrospectively analyzed. Images were categorized into three clinically meaningful groups: CVI-related skin conditions, inflammatory dermatologic diseases, and vasculitis. A Swin Transformer-based model was trained using a patient-level split, with patients exclusively assigned to either training or test sets to ensure strict independence.

The proposed model achieved robust classification performance, with an overall area under the curve (AUC) of 0.935 and an accuracy of 0.848, outperforming both convolutional neural network- and Vision Transformer-based baseline models. Group-specific AUC values were 0.942 for CVI-related conditions, 0.929 for inflammatory dermatoses, and 0.934 for vasculitis. Error analysis revealed that misclassifications primarily occurred in cases with overlapping or atypical dermoscopic features.

These findings demonstrate that a Swin Transformer-based approach can effectively differentiate CVI-related skin lesions from other lower-extremity dermatoses using dermoscopic images. This model may serve as a decision-support tool, facilitating appropriate referral and potentially reducing the need for invasive diagnostic procedures.

IS-3-2

Adjunctive Oral Tranexamic Acid and Glutathione for Prevention of Hyperpigmentation and Phlebitis after Mechanochemical Ablation:< A Retrospective Comparative Study

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Purpose:

Mechanochemical ablation (MOCA, ClariVein) is a non-thermal, non-tumescent technique offering clear advantages over thermal ablation. However, post-sclerotherapy hyperpigmentation (PSH) and superficial phlebitis remain significant contributors to patient dissatisfaction, particularly in Asian patients with Fitzpatrick skin types III to IV. Conventional management is reactive, addressing complications only after they occur. This study aimed to evaluate whether combined oral tranexamic acid (TXA) and glutathione (GSH) could prophylactically inhibit the shared pathophysiological pathways of inflammation, oxidative stress, and melanogenesis.

Methods:

This retrospective single-center comparative study analyzed 60 high-risk patients (Fitzpatrick III to IV, prior pigmentation history, or superficial tributary involvement) who underwent ClariVein ablation by a single operator. The intervention group (n=32, from January 2025) received oral TXA 250 to 500 mg/day plus GSH 500 mg/day for 2 to 4 weeks post-procedure. The historical control group (n=28) received standard care without adjunctive pharmacotherapy. Outcomes assessed at 4 weeks included complication incidence, clinical severity, semi-quantitative color analysis using ImageJ (Delta E), and patient satisfaction. Groups were comparable in age, sex, treated vein diameter, and sclerosant volume.

Results:

The intervention group demonstrated a lower complication rate than controls (9.3% vs 25.0%; relative risk reduction approximately 62%). Complications in the intervention group were qualitatively milder, presenting as transient faint pigmentation and phlebitis without tenderness, whereas controls showed moderate pigmentation and tender cord-like phlebitis often requiring NSAIDs or thrombectomy. ImageJ analysis confirmed lower Delta E values in the intervention group, objectively supporting reduced pigment intensity. No thrombotic adverse events occurred at the sub-hemostatic TXA dose.

Conclusions:

Adjunctive oral TXA and GSH therapy safely and effectively reduces both the incidence and severity of hyperpigmentation and phlebitis following MOCA. This biochemical modulation strategy represents a novel preventive approach that enhances cosmetic completeness and patient satisfaction in esthetic phlebology.

IS-3-3 Clinical Experience with Long-pulsed Nd:YAG 1064nm Laser for Telangiectasia in Asian Patients: Protocol Optimization and Safety

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PURPOSE

Telangiectasia of the lower extremities is a common cosmetic and clinical concern. Although the long-pulsed 1064nm Nd:YAG laser is a gold standard for cutaneous vascular lesions, standardized protocols for Asian skin (Fitzpatrick types III to V) remain limited. Elevated melanin content poses significant risks of post-inflammatory hyperpigmentation (PIH) and thermal injury, necessitating a specialized approach. This study aimed to share our single-center experience and propose an optimized treatment protocol for lower extremity telangiectasia in Korean patients, balancing efficacy and safety.

METHODS

Korean patients were treated with long-pulsed 1064nm Nd:YAG laser at our specialized vein clinic. The protocol was built around four principles. First, fluence titration with conservative starting fluences and individualized incremental increases. Second, extended pulse durations (20 to 40 ms) for selective vessel targeting with epidermal protection. Third, aggressive contact cooling before, during, and after each pulse. Fourth, inter-session intervals of 6 to 8 weeks for tissue recovery and response assessment.

RESULTS

Our protocol yielded favorable patient satisfaction and meaningful telangiectasia clearance. Extended pulse durations with conservative fluences and active cooling substantially minimized PIH incidence, even in Fitzpatrick type IV to V patients. No permanent scarring, necrosis, or ulceration was observed. Pre-procedure counseling on realistic expectations further improved compliance and satisfaction.

CONCLUSIONS

The long-pulsed 1064nm Nd:YAG laser is effective and safe for Asian telangiectasia when the protocol is adjusted for skin phototype. Active cooling and pulse duration management are critical to preventing complications. These findings highlight the need for Asia-specific guidelines and multicenter collaboration to establish evidence-based best practices.

IS-3-4

Optimization of the CLaCS Protocol: Improved Tolerability Without Loss of Efficacy

Dmitrii Rubanchenko

Clinic “Doctor Ven”, Russia

Purpose: To evaluate a modification of the CLaCS protocol aimed at improving patient comfort without reducing efficacy.

Methods: Thirty patients with lower extremity telangiectasias were included. All patients provided written informed consent. A within-patient sequential comparison of the two protocols was performed. The original protocol was performed first: Nd:YAG laser (1064 nm, spot size 6 mm, 15 ms pulse, fluence up to 80 J/cm^2), followed by injection sclerotherapy with 75% dextrose, and air cooling to -20 degrees Celsius. In case of refusal or severe pain, the protocol was switched to the modified version: Nd:YAG laser (2 mm spot, 10 ms pulse, fluence up to 290 J/cm^2) with ultrasound gel applied to the target vein, the same sclerotherapy and cooling. Efficacy was assessed by the degree of vessel obliteration at 4 and 8 weeks. Pain (VAS), willingness to continue treatment, and willingness to return for a repeat session were also evaluated.

Results: Mean VAS score was 7.2 for the original protocol and 1.9 for the modification. During the original protocol, 17 of 30 patients wished to discontinue the procedure; only 6 of 30 would agree to return. After switching to the modified protocol, all 30 patients agreed to continue treatment, and all 30 were willing to return. Efficacy (assessed by regression of telangiectasias at 4 and 8 weeks) did not differ between protocols.

Conclusions: The modification of CLaCS (reduced laser spot size, shorter pulse from 15 to 10 ms, ultrasound gel) significantly reduces pain (1.9 vs 7.2 on VAS) and improves adherence: 100% of patients were willing to repeat the procedure with the modified protocol compared to 20% with the original. This optimization is recommended for clinical use to improve patient comfort and treatment adherence without loss of efficacy.

Keywords: CLaCS, cryo-laser cryo-sclerotherapy, telangiectasias, reticular veins, Nd:YAG, pain management, treatment adherence

IS-3-5 NTNT Venous Ablation: A 5-Year Clinical Review of MOCA and Cyanoacrylate Closure (MMH Experience)

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BACKGROUND: Chronic Venous Insufficiency affects approximately one-third of the global population, progressing from varicose veins to debilitating ulcerations. While thermal ablation remains the "Gold Standard," it requires tumescent anesthesia and carries risks of heat-related nerve injury. Non-Thermal Non-Tumescent (NTNT) modalities, including mechanochemical ablation (MOCA) and cyanoacrylate closure (CAC), have emerged to improve patient comfort and eliminate the need for multiple needle sticks.

METHODS: This retrospective review analyzes the single-center experience from Mackay Memorial Hospital (MMH) from 2020 to 2025, involving 834 venous ablation cases. The study tracked a longitudinal shift in practice patterns from thermal techniques to NTNT options, specifically evaluating 495 VenaSeal (CAC) and 68 ClariVein (MOCA) procedures. Clinical outcomes were compared against major trial data, including the MARADONA and LAMA RCTs for MOCA, and the VECLOSE and WAVES studies for CAC. Technical protocols were implemented to mitigate complications.

RESULTS: In the MMH cohort, VenaSeal demonstrated a superior 98% occlusion rate compared to 85% for ClariVein. While MOCA (ClariVein) significantly reduced postoperative pain compared to RFA (0.2 vs 0.5 median score), it exhibited a "durability deficit" with lower 5-year occlusion rates (~60%). Conversely, CAC proved non-inferior to RFA with a 91.4% 5-year closure rate and remained effective in large veins up to 20mm. Complications in the VenaSeal group included phlebitis (10%), hypersensitivity (2%), and rare DVT (1%).

DISCUSSION: The transition toward NTNT at MMH reflects a preference for patient-centric outcomes, though careful selection is required. MOCA is best suited for smaller diameter veins (<8mm) and distal disease due to zero nerve risk. While highly effective, CAC requires mastery of the "Therapeutic Fork" to manage immunologic risks like the CHAIR phenomenon and prevent glue migration. Thermal ablation remains the most cost-effective strategy for large truncal veins, but NTNT offers a viable, less invasive alternative for appropriate candidates.

IS-4-1

When the great vein closes: a rare benign SVC syndrome defying endovascular therapy

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Purpose: Non malignant superior vena cava (SVC) syndrome due to catheter induced central venous occlusive disease is uncommon and represents only a minority of SVC obstruction cases. Progression to chronic long segment innominate to SVC occlusion is exceptionally rare, and the need for definitive surgical venous bypass is even more unusual, with only isolated cases reported. We present a case of refractory central venous obstruction in which imaging and clinical findings guided management after failed endovascular therapy.

Methods: We reviewed the clinical presentation, diagnostic workup, endovascular attempt, operative strategy, and postoperative course of a young hemodialysis dependent patient with symptomatic central venous obstruction.

Results: A 34 year old woman on chronic hemodialysis presented with progressive facial, neck, and right upper extremity swelling. Computed tomography demonstrated severe narrowing at the brachiocephalic to SVC junction with extensive collateral venous channels. Catheter venography confirmed a chronic long segment right innominate to SVC occlusion with failure of contrast passage across the lesion. Balloon venoplasty was attempted but was unsuccessful because of dense fibrosis and the absence of a traversable lumen. Given the chronicity and anatomic complexity of the lesion, and the lack of feasible endovascular recanalization, the patient underwent a right to left subclavian venous bypass. This extra anatomic venous reconstruction is rarely performed and is generally reserved for highly selected refractory cases. Postoperatively, symptoms improved rapidly with restoration of venous drainage.

Conclusions: This case highlights a rare non malignant SVC syndrome in which conventional endovascular therapy was not feasible and surgical venous bypass became necessary. It also underscores the importance of imaging in confirming lesion extent, demonstrating collateralization, guiding treatment strategy, and identifying the uncommon subset of patients who require surgical reconstruction.

IS-4-2 The Role of Intravascular Ultrasound (IVUS) in Post-Thrombotic Syndrome

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Purpose:
This topic aims to assess the role of Intravascular Ultrasound (IVUS) in diagnosing and guiding interventions for post-thrombotic syndrome (PTS)

Methods:
A review of current literature and clinical practices was conducted to evaluate the effectiveness of IVUS in visualizing venous pathologies such as luminal narrowing, fibrosis, and thrombosis,.... Review some studies comparing IVUS with other diagnostic methods, such as venography, were also analyzed to assess its impact on decision-making and clinical outcomes.

Results:
IVUS has proven to be superior in identifying subtle lesions that are often missed by other imaging techniques. It provides detailed images of venous structures, helping to assess the true lumen, detect fibrosis, and measure stenosis more accurately. Furthermore, IVUS aids in planning stent placement, optimizing the treatment of PTS by selecting appropriate stent sizes and positions, ensuring better clinical outcomes. Studies have shown that IVUS-guided interventions lead to higher patency rates and fewer re-interventions compared to venography.

Conclusions:
IVUS plays a crucial role in the diagnosis and intervention strategy for post-thrombotic syndrome, offering detailed vascular imaging that helps optimize treatment. It enhances decision-making in selecting the appropriate intervention strategy and stent sizing, significantly improving clinical outcomes. Future studies should further explore its long-term impact on PTS management.

IS-4-3

Efficacy of catheter-directed thrombolysis in the treatment of iliofemoral vein thrombosis

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Purpose:

Iliofemoral deep vein thrombosis (DVT) is associated with a high risk of post-thrombotic syndrome (PTS), impaired quality of life, and significant healthcare burden. Catheter-directed thrombolysis (CDT) has emerged as a potential strategy to improve venous patency and reduce long-term complications. This study aims to review current evidence and guideline recommendations on CDT in iliofemoral DVT, with illustrative clinical application.

Methods:

A narrative review of major international guidelines and key studies was performed, including recommendations from the American Society of Hematology, European Society for Vascular Surgery, and other vascular societies. Indications, contraindications, techniques, and outcomes of CDT were analyzed. A representative clinical case of acute iliofemoral DVT associated with May-Thurner syndrome was included to illustrate real-world application.

Results:

Current guidelines consistently suggest that CDT may be considered in carefully selected patients with acute iliofemoral DVT, particularly younger individuals with low bleeding risk, severe symptoms, and thrombosis involving the iliac and common femoral veins. Evidence suggests that CDT can improve early symptom relief and venous patency, and may reduce the severity of PTS in selected populations, although the benefit on long-term outcomes remains variable. The addition of adjunctive interventions, such as venous stenting in cases of underlying anatomical obstruction, is essential to optimize results. The presented case demonstrated rapid symptom resolution, successful recanalization, and sustained clinical improvement at mid-term follow-up.

Conclusions:

CDT plays an important role in the management of selected patients with acute iliofemoral DVT. Appropriate patient selection, strict adherence to indications, and careful monitoring are critical to balance efficacy and bleeding risk. Combined strategies, including correction of underlying venous stenosis, may further improve long-term outcomes.

IS-4-4

Dilated Superficial Veins as Conduits for Autologous Venous Reconstruction in Complex Post-Thrombotic Syndrome with Deep Venous Obstruction

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Purpose:

To evaluate the clinical efficacy of utilising dilated superficial veins as autologous conduits for venous bypass in patients with complex post-thrombotic syndrome and recalcitrant venous leg ulcers when endovascular options are limited or have failed.

Methods:

This study presents two cases of advanced PTS (CEAP C6) managed with individualised autologous venous reconstructions. The first case involves a 34-year-old male with protein C deficiency and bilateral iliocaval post-thrombotic venous obstruction who presented with bilateral chronic venous insufficiency and a recalcitrant left leg ulceration. Following failed ipsilateral endovascular recanalisation and successful contralateral iliocaval stenting, a cross-femoral bypass was performed using dilated superficial epigastric veins identified via duplex ultrasonography. The second case involves a 56-year-old female with a recalcitrant ulceration due to post-thrombotic femoral vein occlusion. Preoperative ultrasonography revealed a patent popliteal and a small saphenous vein (SSV) connecting to the great saphenous vein at the thigh level, with a patent saphenofemoral junction and the absence of saphenopopliteal junction. A side-to-end popliteal-to-SSV anastomosis was performed via a posterior approach in the prone surgical position.

Results:

In the first case, the ulcer healed completely within three weeks. The patient remained recurrence-free with patent venous stents after 5 years. In the second case, the procedure successfully established a new venous outflow tract, resulting in a significant decrease in ulcer size postoperatively. Both cases demonstrated the successful rerouting of deep venous flow through dilated superficial vein channels.

Conclusions:

Dilated superficial veins offer viable autologous alternatives for venous bypass. Precise anatomical mapping via duplex ultrasound is crucial for identifying these available conduits. Utilising dilated superficial veins represents a viable option for treating recalcitrant venous ulcers in patients with complex post-thrombotic deep venous obstruction, provided the anatomy is suitable.

IS-4-5

Efficacy and Patency of Venous Stenting into the Common Femoral Vein for Iliofemoral Steno-occlusive Venous Lesions

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Background: The distal extent of venous stenting remains controversial when iliofemoral steno-occlusive venous lesions extend into the common femoral vein (CFV). This study evaluated the clinical efficacy and patency outcomes of venous stent extension into the CFV.

Methods: We retrospectively reviewed 11 patients with iliofemoral steno-occlusive venous lesions who underwent venous stent placement extending into the CFV. Primary patency was defined as the interval from the index procedure to the first event, with censoring at the last follow-up. Assisted primary patency was assessed after the first event based on subsequent follow-up. Clinical efficacy was evaluated using the Villalta score before treatment and at 6 months after treatment. Kaplan-Meier analysis was used for time-to-event outcomes.

Results: The mean age was 58.5 ± 11.6 years, and 7 patients (63.6%) were male. Primary patency rates at 6, 12, 18, and 24 months were 90.9%, 79.5%, 79.5%, and 63.6%, respectively. Assisted primary patency remained 100.0% through 18 months among patients with a first event, whereas the 24-month estimate was not assessable because no patient remained at risk. In the paired analysis (9 patients), the Villalta score improved significantly from 13.1 ± 5.8 to 3.0 ± 2.7 (Wilcoxon signed-rank test, $p = 0.004$).

Conclusions: Venous stenting extending into the CFV demonstrated acceptable mid-term primary patency and favorable assisted primary patency in this expanded cohort. Significant improvement in the Villalta score suggests meaningful clinical benefit after treatment.

Keywords: common femoral vein; venous stent; iliofemoral obstruction; patency; Villalta score

IS-4-6 The current status of management of venous thromboembolism in cancer patients

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【Background】
Cancer-associated thrombosis (CAT) is a major complication in cancer patients. In particular, venous thromboembolism (VTE) occurs more frequently in cancer patients, and is a major cause of mortality. However, the golden standard of management for cancer VTE has not been established.
【Method】
To clarify the current status of VTE management in cancer patients and to explore optimal treatment strategies, we retrospectively reviewed 702 cancer patients who underwent lower-extremity venous ultrasonography at our institution between January 2023 and December 2024.
【Results】
Among the 702 patients, 385 (54.8%) were female, and the mean age was 69.1 ± 12.2 years. The primary cancer sites were gynecologic cancer in 151 patients (21.5%), colorectal cancer in 132 (18.8%), hematologic malignancies in 80 (11.4%), lung cancer in 77 (11.0%), gastric cancer in 46 (6.6%), urologic cancer in 38 (5.4%), and other malignancies in 178 (25.4%). The mean D-dimer level was 5.6 ± 8.3 μg/mL (range, 0.5-83.3 μg/mL), and asymptomatic patients were 625 patients (89.0 %). VTE was detected in 216 patients (30.8%), including proximal deep vein thrombosis (DVT) in 38 patients (5.4%), isolated distal DVT in 161 patients (22.9%), and pulmonary embolism (PE) in 38 patients (5.4%). Anticoagulation therapy was administered to 117 patients (54.2% of those with VTE), and direct oral anticoagulants (DOACs) were used in 111 of these patients. Among patients with isolated distal DVT, 64 patients (39.8%) received anticoagulation. Clinically relevant bleeding occurred in seven patients. However, thromboembolism related deaths were not observed during the follow up period.
【Discussion】
At our institution, lower-extremity venous ultrasonography was actively performed even in asymptomatic cancer patients and in those with relatively low D-dimer levels. Although most VTE cases consisted of isolated distal DVT, approximately 40% of these patients received anticoagulation. No thromboembolism related deaths occurred, and bleeding complications were infrequent, suggesting favorable clinical outcomes.

IS-4-7

Short-term Outcomes of Thrombolysis versus Surgical Pulmonary Embolectomy in Patients with High-Risk Pulmonary Embolism

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Background: Although current guidelines recommend thrombolytic therapy (TL) as the first-line reperfusion therapy for high-risk pulmonary embolism (PE), its survival benefit compared with surgical pulmonary embolectomy (SPE) remains uncertain. Therefore, this study aimed to compare the effectiveness of TL and SPE using a nationwide inpatient database.

Methods: We identified patients with high-risk PE who underwent SPE or TL within 2 days of admission using a nationwide inpatient administrative database in Japan between July 2010 and March 2023. The primary outcome was in-hospital mortality. Secondary outcomes included complications, favorable neurological outcomes at discharge, length of hospital stay, and total hospitalization costs. Outcomes were compared using overlap weighting. Sensitivity analyses were performed using inverse probability of treatment weighting and multivariable regression analysis.

Results: Among 2,813 eligible patients, 526 underwent SPE and 2,287 received TL. Compared with the TL group, patients undergoing SPE were younger, more likely to be male, had poorer consciousness, and more frequently had heart failure. They were also less likely to be admitted on weekends and more likely to receive intensive treatments, including cardiopulmonary resuscitation, extracorporeal membrane oxygenation, mechanical ventilation, and vasopressors. In addition, they were more frequently treated at high-volume hospitals.

After overlap weighting, SPE was associated with lower in-hospital mortality (22.2% vs. 30.1%, $p = 0.002$) and a higher rate of favorable neurological outcomes at discharge (72.5% vs. 66.7%, $p = 0.040$) than TL. There were no significant differences in complications or length of hospital stay between the two groups, although SPE was associated with higher hospitalization costs. Sensitivity analyses yielded findings consistent with those of the primary analysis.

Conclusions: These findings suggest that SPE may provide better clinical outcomes than TL in selected patients with high-risk PE. Although further prospective studies are warranted, SPE should be considered an important reperfusion treatment option for carefully selected patients with high-risk PE.

IS-4-8

Independent Predictors of Occult Malignancy Diagnosed Within 30 Days After Acute VTE: Unprovoked VTE and Proximal DVT

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ACKGROUND: Efficient evaluation for occult malignancy in patients diagnosed with venous thromboembolism (VTE) is clinically important. Although the COMMAND VTE Registry-2 reported independent predictors of newly diagnosed malignancy after VTE[1], simple clinical markers for occult malignancy at VTE diagnosis remain unavailable[2,3].
METHODS: Between April 2019 and March 2026, we retrospectively analyzed 949 consecutive patients from the acute VTE cohort after excluding those with known active malignancy, chronic thrombosis, and those whose malignancy was diagnosed more than 30 days after VTE diagnosis. Patients were classified into a malignancy group (malignancy within 30 days after VTE diagnosis; n=30) and a non-malignancy group (n=919). Baseline characteristics, transient provoking factors, predefined known risk factors (prior VTE or malignancy, thrombophilia, autoimmune disease), deep vein thrombosis (DVT) location (proximal vs distal), and pulmonary embolism (PE) incidence were compared. Univariable tests and multivariable logistic regression were performed.
RESULTS: Baseline demographics and laboratory values did not differ significantly between groups. The malignancy group had a higher proportion of cases without any transient provoking factors or known risk factors ("unprovoked" by our definition) compared with the non-malignancy group (63.3% vs 20.2%; OR 6.81, $p<0.001$). In multivariable analysis, absence of transient provoking factor or known risk factors (unprovoked VTE) was independently associated with newly diagnosed malignancy within 30 days (OR 5.38, 95% CI 2.45–11.8, $p<0.001$), as was proximal DVT (OR 3.11, 95% CI 1.18–8.20, $p=0.022$). PE showed an association in univariable analysis but was not an independent predictor.
DISCUSSION: Unprovoked VTE and proximal DVT may serve as simple clinical markers for prioritizing targeted occult malignancy screening in patients with acute VTE.

IS-4-9

Balloon-Assisted Endovascular Thrombectomy in Limb-Threatening Deep Vein Thrombosis

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Purpose:

Acute iliofemoral deep vein thrombosis (DVT) may progress to limb-threatening venous outflow obstruction, including the phlegmasia spectrum, requiring urgent restoration of venous patency. While large-bore aspiration thrombectomy is widely used, its effectiveness may be limited in cases with residual or organized thrombus. This report demonstrates a multimodal endovascular strategy incorporating balloon-assisted thrombectomy as a salvage technique.

Methods:

A 75-year-old male presented with a one-week history of progressive left lower limb pain and swelling, acutely worsening to cyanosis, numbness, and impending phlegmasia cerulea dolens. Examination revealed severe edema and absent distal pulses, consistent with critical venous outflow obstruction. After systemic anticoagulation, a trans-internal jugular inferior vena cava filter was placed. Ultrasound-guided popliteal vein access was obtained. Initial aspiration thrombectomy using the Indigo Penumbra system achieved only partial thrombus removal with persistent flow limitation. Balloon-assisted thrombectomy was performed using a Fogarty No. 5 catheter inserted through the previously placed introducer sheath to disrupt and mobilize the organized thrombus, followed by repeated aspiration. Intravascular ultrasound (IVUS) identified significant residual stenosis at the left common iliac vein (CIV), which was treated with balloon venoplasty and stenting.

Results:

Final post-dilation achieved optimal stent expansion. IVUS confirmed restoration of the CIV lumen area. Completion venography demonstrated good inline flow without significant residual thrombus. The patient showed rapid clinical improvement with resolution of limb ischemia.

Conclusions:

In limb-threatening DVT, Fogarty balloon-assisted thrombectomy is an effective and low-cost adjunct when aspiration alone is insufficient for organized thrombus. This approach enhances thrombus clearance and facilitates definitive treatment. IVUS plays a critical role in identifying underlying iliac obstruction and optimizing endovascular reconstruction. A multimodal strategy is essential for successful limb salvage in severe DVT.

IS-4-10 Do Venous Stent Designs Matter? An Architecture-Based Analysis of Contemporary IDE Trial Outcomes

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Background
Dedicated venous stent systems demonstrate substantial variation in structural architecture and inferred mechanical behavior. However, interpretation of comparative outcomes remains challenging because currently available evidence is derived predominantly from heterogeneous single-arm Investigational Device Exemption (IDE) studies. This study aimed to interpret contemporary venous stent outcomes through an architecture-based framework incorporating disease phenotype and lesion complexity.
Methods
A structured evidence synthesis of prospective multicentre IDE and pivotal studies evaluating dedicated venous stents for symptomatic iliofemoral venous outflow obstruction was performed.1-5 Stent systems were categorized according to architecture into flexible laser-cut nitinol platforms, closed-cell constructs, and hybrid systems. Comparative interpretation focused on harmonized 12-month outcomes stratified according to non-thrombotic iliac vein lesions (NIVL), post-thrombotic syndrome (PTS), and acute deep vein thrombosis (aDVT).
Results
Five prospective multicentre IDE or pivotal studies comprising 945 treated patients were included. Flexible laser-cut nitinol platforms included Abre, Venovo, and Zilver Vena systems, whereas Vici represented a closed-cell construct and Duo represented a hybrid platform. Across all studies, 12-month primary patency was consistently higher in NIVL compared with PTS irrespective of stent architecture, ranging from 95.2% -100% and 70.4% - 83.1%, respectively. Post-thrombotic cohorts consistently demonstrated greater lesion complexity, including longer lesion length, higher occlusive burden, and more frequent common femoral vein involvement.
Conclusion
Current evidence suggests that disease phenotype and lesion complexity exert greater influence on venous stent outcomes than architecture alone. Although contemporary venous stent systems demonstrate differing architecture-related mechanical characteristics, definitive superiority of any specific architectural category has not been established within currently available IDE evidence.

IS-5-1

Residual Symptoms After Varicose Vein Surgery: Effects of Exercise Habits and Reinforced Foot Care in Pump Dysfunction Patients

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Objective
To identify factors associated with residual symptoms after varicose vein surgery and evaluate the effects of reinforced foot care and exercise habits.
Methods
This retrospective cohort study included 178 patients who completed 6-month follow-up after surgery between October 2023 and March 2024 (IRB2024013). Patients were divided into VAS = 0 and VAS > 1 groups (n = 89 each). Exercise habits, E/T ratio, revised Venous Clinical Severity Score (rVCSS), and CIVIQ-14 were analyzed. In 58 patients with VAS > 1, reinforced foot care and exercise guidance were provided at 6 months and reassessed at 9 months.
Results
Preoperative exercise time was greater in the VAS = 0 group (83 ± 140 vs. 45 ± 83 min/week, p = 0.031), while E/T ratio was lower (0.392 vs. 0.398, p = 0.049). At 6 months, the VAS = 0 group showed significantly better VAS, rVCSS, CIVIQ-14, E/T ratio, and exercise time (all p < 0.001).
After reinforced intervention in 58 symptomatic patients, exercise frequency increased from 2.8 to 4.4 sessions/week and weekly exercise time reached 150 ± 110 min. VAS improved from 4.1 to 1.7 and rVCSS from 3.7 to 2.6 (both p < 0.001). Multivariate analysis identified postoperative exercise frequency (OR 1.19, p = 0.025) and lower rVCSS (OR 0.65, p < 0.001) as independent predictors of VAS = 0, whereas bilateral treatment, low preoperative exercise, and low phase angle predicted persistent symptoms.
Conclusions
Regular exercise and reinforced foot care improve residual symptoms after varicose vein surgery. Exercise ≥150 min/week in ≥4 sessions with regular stretching may contribute to symptom resolution, even in high-risk patients.

IS-5-2 Quantitative Lymphoscintigraphy SPECT/CT Parameters in the Assessment of Upper Extremity Lymphedema

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Purpose

Lymphedema is a chronic, largely irreversible condition causing swelling, fibrosis, and functional impairment, making early detection crucial. However, identifying early or subclinical lymphedema remains difficult due to limited sensitivity of conventional tools. This study aimed to evaluate quantitative lymphoscintigraphy using SPECT/CT for assessing lymphatic function in patients with unilateral upper extremity lymphedema.

Methods

We retrospectively analyzed 22 female patients with unilateral upper extremity lymphedema who underwent quantitative SPECT/CT lymphoscintigraphy between March 2024 and February 2025. Inclusion criteria included ≥2 cm or ≥9% circumference difference between limbs or relative volume increase (RVI) >5%. Tc-99m phytate (111 MBq) was injected into bilateral second interdigital spaces, with imaging performed 60 minutes post-injection. Quantitative analysis was conducted using Q. Volumetrix MI software. Two parameters were defined: Maximum Lymphatic Activity (MLA), the highest SUVmax among lymphatic structures; and Total Lymphatic Accumulation (TLA), the sum of SUV values from all functional lymph nodes. Clinical metrics included RVI and reduction in RVI (%RRVI) at 1-month follow-up. Statistical analysis used Wilcoxon signed-rank, Mann-Whitney U, and Spearman correlation tests.

Results

MLA and TLA were significantly reduced in affected limbs compared to contralateral limbs (MLA: 106.2 vs. 374.6, $p = 0.002$; TLA: 97.3 vs. 356.8, $p<0.001$). At 1-month, 63.6% had persistent lymphedema. Significant positive correlations were found between MLA ($\rho = 0.58$, $p = 0.011$), MLA ratio ($\rho = 0.60$, $p = 0.008$), and TLA ratio ($\rho = 0.59$, $p = 0.009$) with %RRVI. Patients showing improvement had significantly higher baseline MLA, MLA ratio, and TLA ratio than those with persistent lymphedema (all $p<0.05$).

Conclusion

Quantitative SPECT/CT lymphoscintigraphy provides objective assessment of lymphatic dysfunction beyond conventional evaluation. MLA and TLA effectively distinguish affected limbs and predict short-term treatment response, supporting their use as imaging biomarkers for early detection and management optimization of upper extremity lymphedema.

IS-5-4

Silicone tube implants replacing obliterated lymphatics in lymphoedema of upper and lower limbs in India

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Purpose to treat lymphoedema of limbs with total obstruction of lymphatic channels

Method surgical implantation of silicone tubes as artificial lymphatics and follow the patients over years

Study of palliative improvement in quality of life of patients with lymphoedema

A novel method is presented in the ongoing care of lymphoedema with good improvement

IS-5-5 Ultra-High-Frequency Ultrasound Mapping of Lymphatic Structural Abnormalities to Guide Lymphaticovenular Anastomosis

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Background:
Accurate identification of suitable lymphatic vessels is essential for successful lymphaticovenular anastomosis (LVA). While conventional imaging evaluates lymphatic function, ultra-high-frequency ultrasound (UHFUS) enables direct visualization of lymphatic vessel morphology. The spatial distribution and clinical relevance of structural abnormalities detected by UHFUS remain unclear.
Methods:
Thisa prospective observational study included patients with extremity lymphedema undergoing preoperative assessment and LVA. UHFUS was performed using a 46-MHz probe to evaluate lymphatic vessels along predefined longitudinal axes. Lymphatic structural transition points (LSTPs) were defined as complete obstruction, abrupt luminal narrowing, or tortuous segments with irregular lumen. Coordinates of these findings were recorded relative to a standardized reference point. Secondary evaluations included vessel detectability, number of lymphatic vessels, presence of confluence points, and characteristics of lymphatic vessels at selected incision sites.
Results:
Fifty sites were analyzed. UHFUS identified lymphatic vessels in all cases. LSTPs were detected in 96% of sites within the observation range. Mean coordinates differed by subtype: complete obstruction, abrupt narrowing, and tortuous segments. Confluence points were observed in 36% of cases and were typically located distal to LSTPs. At UHFUS-guided incision sites, lymphatic vessels showed ecstatic morphology and were suitable for anastomosis, with favorable intraoperative flow observed in all cases.
Discussion:
UHFUS enables precise identification of lymphatic structural abnormalities and their spatial distribution. Structural transition points are predominantly located proximally, whereas distal segments often retain morphology suitable for anastomosis. UHFUS-based mapping may improve surgical site selection and enhance the precision of LVA in lymphedema treatment.

IS-5-6

Lymphatic Vessel Quality Drives LVA Outcomes: Venous Reflux Reflects Surgical Strategy Evolution

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Background: Lymphovenous anastomosis (LVA) relies on a pressure gradient to shunt lymph into the venous system. It is traditionally hypothesized that venous reflux might impede drainage by increasing distal venous pressure. We investigated whether lymphatic vessel (LV) characteristics or venous reflux scores are the primary independent predictors of LVA efficacy.

Methods: We retrospectively analyzed 164 patients with lower extremity lymphedema who underwent ICG-guided side-to-end LVA. All patients followed a standardized perioperative compression protocol. The primary endpoint was the change in the Lower Extremity Lymphedema Index (LEL index) at 6 months. Ordinary least squares regression with HC3 robust standard errors was utilized to identify independent predictors of volume reduction.

Results: LVA significantly reduced LEL index at 6 months (median −10.9 units, Wilcoxon $p<0.001$, $n=147$). Multivariate regression ($R^2=0.37$) identified higher baseline LEL index ($\beta=+0.26$, $p=0.012$), fewer anastomoses ($\beta=-4.75$, $p=0.033$), and older age ($\beta=+0.25$, $p=0.034$) as independent predictors. Mean LV diameter showed a consistent positive association across all model specifications ($\beta\approx+11$, $p=0.145$). Venous reflux was significant in the pooled model ($\beta=-6.35$, $p=0.038$) but absent on surgical chronology stratification (all $p>0.20$), suggesting it reflects accumulated experience rather than a physiological role. A composite strategic score of normalized LV diameter and inverted venous reflux improved significantly from the earliest to the most recent surgical quartile (Mann-Whitney $p=0.002$). The score was positively correlated with maximum LEL index reduction ($r=0.22$, $p=0.016$).

Conclusions: LVA efficacy is driven by lymphatic vessel quality rather than venous reflux. Era-stratified analysis suggests venous reflux significance in the pooled model reflects evolving surgical selection rather than a direct physiological effect. The significant improvement in composite strategic score over time confirms strategy maturation toward favorable anastomosis. Surgical selection should prioritize dilated lymphatics (≥0.75 mm) at dermal backflow sites; a reduction in venous reflux may indicate a refined technique, and both lead to better outcomes.

IS-6-1

When a Groin Mass is Not a Tumor: Two Cases of Saphenofemoral Junction Varix, Including a Giant Thrombosed Lesion

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Background

Saphenofemoral junction (SFJ) varix is an uncommon presentation of chronic venous disease and may mimic other groin pathologies, leading to misdiagnosis.

Case Presentation

We report two female patients presenting with right groin masses.

A 37-year-old woman presented with a slowly enlarging groin mass over two years, associated with mild discomfort. The mass increased on standing and decreased in the supine position. Duplex ultrasound demonstrated a 24 mm dilated SFJ with significant reflux.

A 31-year-old woman presented with a firm and tender groin mass, initially suspected to be a tumor. Duplex ultrasound revealed a giant SFJ varix measuring 42 mm with thrombosis, explaining the atypical presentation.

Management and Outcome

Both patients underwent surgical excision with high ligation of the SFJ. The procedures were uneventful, with complete resolution of symptoms. During follow-up at 3, 6, 12, and 18 months, no recurrence or complications were observed.

Conclusion

SFJ varix should be considered in the differential diagnosis of groin masses, especially in atypical or large lesions. Duplex ultrasound is essential for accurate diagnosis. Surgical treatment provides safe and durable outcomes, even in giant thrombosed cases.

IS-6-2

Multimodal Endovenous Management of Refractory Chronic Venous Insufficiency in a Patient with Post-Traumatic Lower Limb Deformity

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A 67-year-old male developed progressive chronic venous insufficiency (CVI) following a vehicular accident that resulted in bilateral varus deformity with foot eversion. He presented with worsening bilateral calf and ankle hyperpigmentation, edema, and recurrent venous ulcers in the gaiter areas, refractory to medical therapy and compression stockings.

Duplex ultrasound demonstrated significant superficial venous reflux. A staged, multimodal endovenous approach was performed. Ultrasound-guided foam sclerotherapy (UGFS) was applied to the right great saphenous vein (GSV) and anterior and posterior calf tributaries. Cyanoacrylate glue ablation (CAG) was used for the left GSV and bilateral small saphenous veins. Residual refluxing segments, including a left calf perforator and bilateral ankle GSV tributaries, were treated with direct cyanoacrylate injection. The patient also underwent structured physical therapy to improve calf muscle pump function.

The patient demonstrated marked clinical improvement, with reduction in edema and hyperpigmentation and no recurrence of ulcers. However, at one-month follow-up, duplex imaging showed recanalization of the right GSV (mid to distal thigh) and right calf perforator treated with UGFS, as well as the right small saphenous vein treated with CAG. In contrast, the remaining CAG-treated veins demonstrated durable occlusion.

This case underscores two important considerations. First, post-traumatic lower limb deformities and impaired calf muscle pump function may exacerbate venous hypertension and contribute to refractory CVI. Second, the observed difference in durability suggests that CAG may provide superior short-term vein closure compared to UGFS in patients with complex or extensive reflux.

In such cases, a tailored, multimodal strategy addressing both axial and perforator reflux is essential. Further studies are needed to determine optimal treatment selection and long-term outcomes in this subset of patients with advanced CVI.

IS-6-3

Efficacy and Safety of Thromboprophylaxis in Vascular Surgery: Caprini Score Assessment in a Prospective Single-Center Study

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Purpose

To evaluate the efficacy and safety of thromboprophylaxis and the predictive value of the Caprini score for venous thromboembolism (VTE) risk stratification in patients undergoing major vascular surgery.

Methods

A prospective observational study (September 2022 to July 2025) enrolled 580 patients in five groups: endovascular (IA, n=101) and open (IB, n=116) aortic aneurysm repair; endovascular (IIA, n=183) and open (IIB, n=119) lower-extremity PAD revascularization; and primary amputation (IIC, n=61). All received standardized LMWH prophylaxis (enoxaparin 40mg daily). Caprini scores were calculated on admission. VTE was assessed by duplex ultrasound at admission, postoperative days 4-7, and day 30. Multivariate logistic regression identified independent VTE predictors and their impact on 30-day mortality.

Results

Overall VTE incidence was 7.24% (42/580; PE 0.86%), varying by procedure: IA 4.95%, IB 11.21%, IIA 4.37%, IIB 8.40%, IIC 9.84%. ROC analysis demonstrated good discrimination (AUC=0.835; optimal cutoff >6, OR=12.94). Procedure-specific thresholds ranged from >5 (IIC, AUC=0.961) to >10 (IB, AUC=0.652), the latter reflecting a ceiling effect in open aortic surgery. Multivariate regression confirmed the Caprini score as an independent VTE predictor in all groups (OR per 1-point 1.29-14.60; all $p<0.05$), alongside ischemic complications (OR 10.33), transfusion >2 PRBC units (OR 12.5), acute kidney injury (OR 4.37), and rest pain/Fontaine III (OR 6.56). VTE was associated with markedly increased 30-day mortality after open aortic surgery (OR 22.4) and amputation (OR 14.6). Prophylaxis-related bleeding occurred in 2.06% (major 0.86%).

Conclusions

Standard thromboprophylaxis provides acceptable safety but incomplete protection, particularly after open aortic surgery and primary amputation. The Caprini score is an independent VTE predictor but requires procedure-specific thresholds, and baseline risk becomes dynamic after major perioperative complications. Intensified prophylaxis in the highest-risk subgroups warrants prospective evaluation.

IS-6-4

Postoperative usability of the great saphenous vein as a potential venous conduit after CHIVA surgery for varicose veins

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Purpose: The great saphenous vein (GSV) is commonly ablated or removed in conventional treatments for varicose veins, despite its importance as a potential venous conduit for future vascular procedures. CHIVA (Conservative and Hemodynamic treatment of Venous Insufficiency) aims to correct pathological flow while preserving the saphenous vein. However, data regarding the postoperative usability of the preserved GSV remain limited. This study evaluates the anatomical and functional usability of the GSV after CHIVA.

Methods: This retrospective cohort study includes patients with primary varicose veins treated with CHIVA involving the GSV. Preoperative assessment records GSV diameter and usable length. Postoperative duplex ultrasound at 3 months evaluates vein patency, reflux, segmental diameter, continuity, and usable length. Additional follow-up data (3–24 months) are available in a subset of patients. Vein usability is defined based on anatomical and hemodynamic criteria, including patency, continuity, absence of significant reflux, and preservation of adequate length. The target sample size is over 50 limbs, and data collection is ongoing, with final results expected by the end of April 2026.

Results: Currently, 36 limbs have been included in the preliminary analysis. Initial findings show that patency is maintained in 91.7% of preserved GSVs at 3-month follow-up. Vein continuity is generally preserved, and reflux appears to be eliminated or significantly reduced in most cases. Usable vein length is largely maintained, with segmental diameter remaining within a clinically relevant range. Further data analysis is ongoing.

Conclusion: Preliminary results suggest that CHIVA allows preservation of the GSV with maintained anatomical integrity and functional usability. This vein-preserving strategy may retain structural characteristics compatible with potential future use as a venous conduit. Final results will provide further insight into the durability and clinical implications of this approach.

IS-6-5

The Hemodynamic Revolution in Varicose Vein Treatment: The Role of Asia

QIANG ZHANG

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Purpose:

The treatment of varicose veins has gradually shifted from destructive procedures toward hemodynamic strategies aimed at preserving the venous network. This presentation discusses the emerging role of Asia in this hemodynamic transformation.

Methods:

Clinical experience from high-volume venous centers in Asia, particularly China, where large numbers of patients have been treated using vein-preserving approaches such as CHIVA (Conservative Hemodynamic Treatment of Venous Insufficiency), is reviewed. In addition, recent developments in digital technology, including artificial intelligence–assisted consultation, tele-education, and data sharing among specialized venous centers, are considered.

Results:

Large patient populations and the rapid development of specialized venous centers in China have provided valuable insights into reflux patterns, patient selection, and long-term outcomes of hemodynamic treatment strategies. Emerging digital tools have also begun to support clinical decision-making, education, and international collaboration.

Conclusions:

Asia is becoming an increasingly important contributor to the global development of hemodynamic vein treatment. Technological innovation, combined with structured education through initiatives such as the Asia Venous Academy, may accelerate the dissemination of vein-preserving strategies and shape the future of venous surgery.

IS-6-6

Recurrence is Not Failure: A Hemodynamic Perspective on Varicose Vein Treatment Using a CHIVA-based Strategy

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Purpose:

Recurrence after varicose vein treatment is commonly regarded as a technical failure. However, this interpretation may overlook the underlying role of venous hemodynamics. This study aimed to analyze the hemodynamic mechanisms of recurrence and evaluate a CHIVA-based strategy for its management.

Methods:

We performed a retrospective analysis of patients presenting with recurrent varicose veins at a specialized venous center between 2021 and 2024. All patients underwent detailed duplex ultrasound and hemodynamic assessment. Recurrence patterns were classified into predefined categories, including untreated escape points, newly developed reflux pathways, and inappropriate initial strategies. A CHIVA-based hemodynamic approach was applied for revision treatment.

Results:

A total of 96 limbs in 82 patients were included, with a mean follow-up of 22 months. The main mechanisms of recurrence were untreated escape points (38%), newly developed reflux pathways (33%), and inappropriate initial strategies (29%). Hemodynamic correction was achieved in 89% of limbs. After CHIVA-based revision, symptom improvement was observed in 91% of cases, with a re-recurrence rate of 8%. No major complications were recorded.

Conclusions:

Recurrence of varicose veins should be understood primarily as a hemodynamic issue rather than a technical failure. A CHIVA-based strategy provides an effective and vein-preserving solution by addressing the underlying reflux mechanisms. This approach may offer a more rational framework for managing complex recurrent disease and optimizing long-term outcomes.

IS-6-7

Clinical Outcomes of CHIVA for Lower Extremity Varicose Veins with Different Reflux Sources

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OLIVEIN, China

Purpose

To evaluate the clinical effectiveness of the CHIVA technique in the treatment of varicose veins with different reflux sources.

Methods

A retrospective analysis was conducted on 160 patients with varicose veins treated with CHIVA between 2018 and 2022. According to duplex ultrasound findings, patients were classified into three groups: great saphenous vein (GSV) reflux (65%), small saphenous vein (SSV) reflux (25%), and deep venous reflux (10%). Individualized treatment strategies were applied based on reflux patterns. Patients were followed up for 6 months to 2 years. Clinical symptoms, ultrasound findings, and postoperative complications were evaluated.

Results

Overall, significant symptom improvement was observed. In the GSV group, 80% of patients reported relief of heaviness, fatigue, and edema. In the SSV group, 95% achieved complete symptom resolution. In the deep venous reflux group, 70% showed improvement, although some required additional rehabilitation. Postoperative complications were minimal, mainly mild ecchymosis and localized inflammation.

Conclusion

CHIVA is a safe and effective minimally invasive technique for treating varicose veins, particularly in patients with superficial venous reflux. Its effectiveness in deep venous reflux is relatively limited, highlighting the importance of accurate hemodynamic assessment and individualized treatment

IS-6-8

How to Make the Most of the Last Autologous Vein:Technical Considerations and Outcomes of Transposed Brachiobasilic Arteriovenous Fistula

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S-1-1 Optimizing Primary Venous Stent

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Emory University Midtown Hospital WellStar West Georgia Medical Center, USA

Indications are Symptomatic obstruction in femoroiliac and caval level (impairment of the daily life) , not earlier than 6 months after iliofemoral DVT and sufficient conservative therapy.Contraindication include:1.Severely impaired inflow due to extensive involvement of FV and DFV (trabeculation in FV and DFV). 2. DVT in the past 6 months. 3. Asymptomatic patients / no impairment in the daily life. 4. Contraindication for therapeutic anticoagulation. There are different diagnostic methods. The first imaging modality is duplex ultrasound. We use duplex and magnetic resonance venography for preopertive assessment. During the procedure multiplane ascending venography is necessary. Intravascular ultrasound is also used intraoperatively. After the procedure we use duplex ultrasound to evaluate the reconstruction.Imaging modalities include: DuplexUltrasound, MRV / CTV and IVUS. Venography may underestimate stenosis by up to 30% compared to IVUS. IVUS is crucial for accurate diagnosis and appropriate stent sizing/placement.Patients should have clear signs and symptoms affecting their daily life. Iliac vein stenting is effective in carefully selected C3 and C4–C6 patients. The Common Femoral Vein (CFV) and inflow veins must be carefully evaluated and treated when necessary. Stent Strategy are:1. Using dedicated venous stents. 2. Stent from a good inflow to a good outflow to ensure adequate venous drainage. 3. The entire diseased segment should be covered, even if the stent extends below the inguinal ligament. Expected Outcomes include : with appropriate patient selection and technique, many patients with chronic venous obstruction experience significant symptom relief after recanalization. Uninterrupted venous outflow and sufficient inflow from below are vital for long-term patency and symptom improvement.

S-1-2 DVT management in himalayan region

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Background:
VTE Incidence: 2-3/1000 ; men > women (> 45yrs).
DVT and PE are a single clinical entity
Risk of early death in DVT + PE is 18 X higher than in DVT alone
¼ of PE cases present with sudden death
Poor survival in DVT: older age, male, hospital, CHF, CLD, neuro disease & active malignancy.
S/S:
Leg (or arm) pain
Swelling of the limb
Sensation of muscle cramping
Tenderness of the calf (or arm)
Methods & results:
Aim of Management:
Initially : to prevent propagation of thrombus
Chronic anticoagulation to allow fibrinolysis and recanalization.
Heparin immediately and for at least 3 to 5 days
VKA started on the 1st day--old days
Failure to achieve optimum
treatment early on leads to
recurrence rates of 20 %
NOACs:
Fondaparinux : Pentasaccharide
Dabigartran : oral DTI
Rivaroxaban: direct factor Xa inhibitor
Advantages
No coagulation lab monitoring
No dose adjustments
No drug-food interactions
No incidence of HIT
Rare drug-drug interactions
No bridging needed prior to invasive procedures
Open thrombectomy
Mechanical thrombectomy
Venoplasty / stenting
Conclusions:
-Endovascular options are more effective in reducing long-term morbidity after proximal DVT when compared to anticoagulation alone.
-These options should be considered for all patients with proximal lower-extremity DVT and a reasonable life expectancy.
-PMT is at least as effective as CDT, with reduced ICU and hospital stays and decreased overall COSTS.
-Venous angioplasty and stenting may be required to treat recalcitrant thrombus or anatomic causes of DVT.
-With widespread implementation of these advanced treatment options for DVT, we can achieve a significant reduction in long-term morbidity after proximal DVT.
Reference: DVT , Himalaya , Penumbra

S-1-3 Revisiting Urokinase-Based Catheter-Directed Thrombolysis in the Era of Mechanical Thrombectomy: Is There Still a Role?

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Background

The emergence of pharmacomechanical thrombectomy has significantly shifted the treatment paradigm of iliofemoral deep vein thrombosis (DVT), often replacing catheter-directed thrombolysis (CDT). However, the role of urokinase-based CDT in contemporary practice remains unclear, particularly in complex or refractory cases.

Methods / Case Presentation

We present a 66-year-old female with acute left lower limb pain, swelling, and fever. Imaging revealed left popliteal–femoral vein thrombosis. Initial management included anticoagulation followed by endovascular intervention with inferior vena cava filter placement, percutaneous transluminal angioplasty (PTA), and urokinase-based CDT. Despite partial thrombus resolution, residual thrombus burden and persistent symptoms necessitated repeat intervention.

Results

Follow-up imaging revealed an underlying gynecologic malignancy with suspected pelvic involvement, suggesting a persistent prothrombotic state. Re-intervention with a more aggressive strategy was performed. This case demonstrated that thrombus resolution was limited when relying solely on a single modality, particularly in the presence of ongoing biological drivers.

Conclusion

In the era of mechanical thrombectomy, the dichotomy between device-based therapy and thrombolysis may be misleading. Urokinase-based CDT remains clinically relevant, particularly for distal thrombus clearance and thrombus modification. Rather than replacement, a hybrid strategy integrating mechanical debulking and pharmacologic dissolution may optimize outcomes in complex DVT cases. Future strategies should focus on patient-specific, biology-driven treatment selection.

S-1-4

Current Challenges and Evolving Techniques in Venous Stenting: Strategies for Optimizing Outcomes

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Background: Endovascular management of chronic venous outflow obstruction (CVOO) has become a cornerstone of contemporary vascular surgery. While stenting provides excellent early symptom relief for patients with non-thrombotic iliac vein lesions (NIVL) and post-thrombotic syndrome (PTS), maintaining long-term patency within the dynamic venous system remains a complex clinical challenge.

Current Surgical Challenges: Vascular surgeons frequently encounter distinct anatomical and biomechanical hurdles, particularly at the iliocaval confluence and across the inguinal ligament. Key procedural challenges include navigating chronic total occlusions (CTOs), preventing life-threatening stent migration, managing stent fracture or compression, and treating recalcitrant in-stent restenosis (ISR). Furthermore, establishing an optimal post-interventional antithrombotic strategy to balance bleeding risks with the prevention of acute stent thrombosis remains a difficult clinical decision.

Evolving Techniques and Technologies: This presentation reviews the paradigm shift from legacy devices to dedicated nitinol venous stents, evaluating their balance of radial force, crush resistance, and flexibility in high-stress venous segments. We will discuss advanced endovascular recanalization strategies for complex occlusions. Crucially, the presentation will emphasize the indispensable role of Intravascular Ultrasound (IVUS) not merely as an adjunct, but as a mandatory tool for accurate vessel sizing, precise lesion mapping, identifying hidden compression points, and confirming optimal stent expansion.

Conclusion: Mastering complex venous stenting requires a nuanced understanding of venous hemodynamics and device mechanics. By integrating evolving dedicated stent technologies, mandatory IVUS guidance, and meticulous procedural planning, vascular surgeons can effectively overcome anatomical limitations, minimize complications, and achieve durable, long-term clinical success.

S-2-1 Complications of cyanoacrylate closure

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Cyanoacrylate closure (CAC) has emerged as a non-thermal, non-tumescent endovenous technique for the treatment of saphenous vein incompetence and varicose veins. By delivering a medical adhesive into the target vein, CAC achieves occlusion through rapid polymerization and subsequent fibrotic sealing, offering advantages such as reduced procedural pain, shorter procedure time, and avoidance of thermal nerve injury. Despite favorable efficacy and safety profiles reported in clinical trials, a spectrum of complications has been described and warrants careful consideration. The most commonly reported complication is localized inflammatory reaction, often termed cyanoacrylate-related hypersensitivity or phlebitis-like reaction. This typically presents with erythema, tenderness, pruritus, and induration along the treated vein, usually occurring days to weeks after the procedure. While often self-limiting, symptoms may require nonsteroidal anti-inflammatory drugs, antihistamines, or corticosteroids. True allergic reactions are rare but have been documented, emphasizing the importance of patient selection and history of hypersensitivity.

Thrombotic complications include thrombus extension after CAC (TEATCAC) characterized by thrombus extension into the deep venous system. Although most cases are low-grade and resolve with surveillance or short-term anticoagulation, careful post-procedural duplex ultrasound monitoring is recommended. Endovenous glue-induced thrombosis (EGIT) is the other complication which is the extension of glue into deep vein. However, the treatment of EGIT is still unknown, Other reported adverse events include localized infection, foreign body granuloma formation, vein recanalization, and persistent pain or palpable cord-like structures.

In conclusion, cyanoacrylate closure is an effective minimally invasive treatment for varicose veins; however, awareness of its specific complication profile is essential. Proper patient selection, standardized procedural technique, and vigilant follow-up are critical to minimizing adverse outcomes and optimizing clinical results.

S-2-2

Tricuspid Regurgitation as a Predictor of Chronic Venous Insufficiency: A Machine Learning Approach

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Background: Chronic venous insufficiency (CVI) is a highly prevalent venous disorder. Current disease assessment predominantly focuses on lower extremity venous pathology, often overlooking the proximal cardiac influence on venous return, particularly right heart function and tricuspid regurgitation (TR). Recent studies have established a close association between TR and CVI pathological progression; however, the quantitative relationship between TR severity and CVI staging, as well as the clinical utility of incorporating TR into the CEAP classification system, remain insufficiently explored. Conventional diagnostic approaches rely on manual ultrasonographic evaluation, which is inherently subjective and limited in capturing complex nonlinear associations. Therefore, there is an urgent need to integrate machine learning algorithms to develop more precise quantitative diagnostic tools.

Objective: This study aims to construct a machine learning-based model for discriminating CVI severity by integrating right heart-venous axis ultrasound features and multi-dimensional clinical indicators; to clarify the discrimination efficiency of TR-related parameters for CVI severity; and to validate the clinical application value of this model in distinguishing early-stage (C0-C3) from advanced-stage (C4-C6) CVI patients, thereby providing a new theoretical basis and practical tool for precision stratified management of CVI.

Methods: This single-center, observational cross-sectional clinical study consecutively enrolled 190 patients diagnosed with CVI at ******* from June 2023 to June 2025. According to the CEAP clinical classification, patients were divided into an early-stage group (C0-C3, n=90) and an advanced-stage group (C4-C6, n=100). Baseline clinical data, lower extremity venous ultrasound parameters, core quantitative TR indicators from cardiac ultrasound (regurgitation area, valve orifice flow velocity, etc.), right heart function indicators (TAPSE, right ventricular wall thickness, etc.), and laboratory test data were collected. Ten mainsTReam machine learning algorithms (including Naive Bayes, Random Forest, and Logistic Regression) were used to construct the discrimination model with four core variable domains (TR domain, venous domain, inflammatory domain, and demographic domain) as feature variables. Model performance was evaluated using receiver operating characteristic (ROC) curve, accuracy, sensitivity, specificity, and area under the curve (AUC). Ten-fold stratified cross-validation was used for internal validation, and feature importance was clarified through SHAP value analysis.

Results: Right heart-venous axis indicators in the advanced-stage CVI group were significantly higher than those in the early-stage group: TR regurgitation area (10.96 ± 11.55 vs. 5.88 ± 7.02 cm^2, $P<0.001$), inferior vena cava diameter (20.61 ± 7.62 vs. 17.12 ± 5.53 mm, $P<0.001$), and pulmonary artery systolic pressure (48.81 ± 33.44 vs. 40.09 ± 23.07 mmHg, $P=0.04$). The Naive Bayes model showed the best performance in the validation set, with an AUC of 0.835, accuracy of 81.0%, sensitivity of 79.0%, and specificity of 83.0% for distinguishing early-stage from advanced-stage CVI, which was superior to the traditional Logistic Regression model (AUC=0.762, $P<0.05$). SHAP value analysis revealed that Valsalva test, tricuspid valve orifice flow velocity, TR regurgitation area, and inferior vena cava diameter were the core features with the highest contribution in the model. The calibration curve of the nomogram model constructed based on core features showed good consistency between predicted probability and actual observation frequency (Hosmer-Lemeshow test $P=0.072$), and decision curve analysis confirmed its good clinical practical value.

S-2-3

Demographic and Clinical Profile of Chronic Venous Disease in Elementary and Secondary Public School Teachers in Central Jakarta

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Purpose: To compare the demographic and clinical profile of chronic venous disease (CVD) among elementary and secondary public-school teachers in Central Jakarta based on CEAP

Method: This descriptive cross-sectional study used stratified clustered random sampling to divide subjects into two groups: elementary and secondary school teachers. Data were analyzed using SPSS and Microsoft Excel for frequency and cross-tabulation calculations.

Results: Across 157 teachers (70 elementary, 87 secondary) screened over 2 weeks in Central Jakarta, CVD prevalence was higher in elementary teachers (36/70, 51.4%) than secondary (33/87, 37.9%), though not statistically significant (p=0.428). Factors significantly associated with CVI included age >40 (p=0.002), longer teaching history (p=0.008), family history (p=0.006), pregnancy (p<0.001). hormonal contraceptive use (p=0.003), and self-reported prior CVI (p<0.001); BMI, exercise, smoking, comorbidities, and high-heel use showed trends but no between-group significance. VCSS scores were largely negative – mild; among CVI-positive teachers, elementary staff had more severe cases (11.1% vs 3.0%; p=0.375).

Conclusion: Findings suggest elementary school teachers, who are more often older, female, and exposed to prolonged standing, experience a greater burden and severity of CVD compared to secondary teacher in prevalence, although the difference wasn't statistically significant.

Keywords: chronic venous disease, clinical profile, demographic profile, school teachers, venous insufficiency

S-2-4

How to Achieve the Best Results with Foam Sclerotherapy in the Treatment of Varicose Veins

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Background
Foam sclerotherapy has emerged as a cornerstone minimally invasive treatment for varicose veins, offering effective obliteration of incompetent superficial venous segments with minimal patient morbidity. Despite its widespread adoption, clinical outcomes remain highly variable and are critically dependent on technique, foam preparation method, and operator experience. The choice between manual (Tessari method) and mechanical/automated foam preparation systems has gained increasing attention as a determinant of foam quality, consistency, and ultimately, treatment efficacy. This abstract outlines a structured approach to optimising results with foam sclerotherapy by addressing key technical variables.

Methods
A comparative analysis of foam preparation techniques was undertaken, evaluating manual Tessari three-way stopcock method against automated foam generation devices in terms of bubble size homogeneity, foam stability, liquid-to-gas ratio, and sclerosant concentration consistency. Parameters including sclerosant choice (polidocanol vs. sodium tetradecyl sulphate), concentration, volume per session, injection technique (duplex-guided vs. blind), patient positioning, and post-procedure compression protocols were systematically reviewed. Cases were stratified by vein diameter, CEAP classification, and anatomical distribution.

Results
Automated foam preparation yielded superior bubble size uniformity and reproducible liquid-to-gas ratios compared to manual methods, translating into more predictable endovascular inflammatory response and higher rates of complete vein obliteration on follow-up duplex ultrasonography. Duplex-guided injection, optimal foam volume titration, and structured post-procedural compression were independently associated with improved outcomes and reduced recanalisation rates. Adverse events, including visual disturbances and thrombophlebitis, were minimised with strict volume limits and patient selection.

Discussion
Achieving consistent, high-quality results with foam sclerotherapy demands attention to the entire treatment pathway — from foam preparation to injection technique and aftercare. While manual methods remain accessible and cost-effective, automated systems offer a quality advantage in high-volume practice. Standardisation of technique, meticulous duplex guidance, and individualised treatment planning are the pillars of best practice in foam sclerotherapy.

S-2-5

Chronic Venous Insufficiency -Pathophysiology, conservative management, and venoactive drugs

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Chronic venous disease (CVD) affects 20–40% of the population and is strongly influenced by familial predisposition, age, obesity, and sedentary lifestyle. The fundamental pathophysiology involves venous hypertension, arising from reflux, obstruction, or both, within the superficial or deep venous systems of the lower limb. Recent evidence highlights the role of obesity-associated factors, such as increased intra-abdominal pressure and altered respiration, in modulating venous flow. Progressive increases in body mass index (BMI) have been consistently correlated with greater disease severity.

At the molecular level, patients with skin changes secondary to varicose veins exhibit upregulation of adhesion molecules in leukocytes and endothelial cells. Beyond red blood cell efflux, leukocyte trapping and migration, accompanied by the release of inflammatory mediators, drive dermal changes including eczema, lipodermatosclerosis, and ulceration. Key inflammatory contributors include macrophage-derived growth factors, proinflammatory cytokines, and matrix metalloproteinases (MMPs).

Despite pronounced venous incompetence and reflux in individuals with large varices, compensatory mechanisms—potentially involving deep venous system competence and calf muscle pump integrity—may mitigate inflammation by promoting effective venous return. Elucidating these mechanisms would reinforce the value of conservative management strategies such as compression therapy, weight reduction, and exercise.

A deeper understanding of the molecular basis of inflammation could inform novel therapeutic approaches. Venoactive drugs (VADs) have demonstrated efficacy in reducing adhesion molecule expression and attenuating inflammatory mediator release. These agents are particularly beneficial in early disease stages, where symptoms such as swelling, pain, pruritus, and distension impair quality of life, yet invasive interventions are not indicated and compression garments may be poorly tolerated. In advanced disease, VADs serve as effective adjuvant therapy, providing symptomatic relief and supporting ulcer healing.

S-2-6 Compression Therapy for CVI in Korea

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Compression therapy is the gold-standard treatment for chronic venous insufficiency (CVI), aiming to counteract venous hypertension and improve blood flow. Compression of calf muscle works by applying external pressure to the lower limbs, which enhances venous return. It reduces the diameter of veins, which restores the function of impaired valves, reduces reflux, and increases blood flow velocity toward the heart. And it reduces edema by preventing intraluminal pressure increases, it reduces vascular wall tension and facilitates lymphatic drainage, helping to clear excess fluid from tissues.

Materials are primarily categorized by their elasticity and the pressure they exert. Elastic (Long-stretch): These contain elastomeric fibers and can stretch over 100% of their original length. They provide high pressure at rest but relatively low-pressure during muscle contraction. Inelastic (Short-stretch): These have little to no elastic fibers and an elongation capacity of 10%–100%. They provide a high "working pressure" during walking by resisting muscle expansion, making them very effective for reducing edema. Stiffness.

Patient of CVI adherence to compression therapy is often low due to several barriers. Physical Discomfort is the common issues include pain, skin irritation, heat, and difficulty putting the garments on (donning). And the psychological/social conventions of patients may find the garments unattractive or restrictive regarding clothing and footwear choices. Also lack of education for compression therapy is barrier. Many patients do not fully understand the therapy's necessity or its long-term benefits in preventing ulcer recurrence.

The South Korea compression therapy market is projected to grow from USD 66.6 million in 2023 to USD 132 million by 2035, with a CAGR of 5.991%. The market expansion is driven by an aging population, increasing prevalence of chronic venous disorders (CVD), and advancements in compression therapy technologies, including wearable and smart devices. Key product categories include compression garments, bandages, pumps, and hosiery, targeting conditions such as lymphedema, chronic venous insufficiency, sports injuries, and post-surgical recovery.

Government health initiatives and guidelines from the Korean Society of Phlebology are raising awareness about compression therapy’ s benefits, particularly in home care and rehabilitation settings.

S-2-7 Connecting the Dots: How Basic Venous Wall Physiology Informs Modern Diagnostics and Therapeutics

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BACKGROUND:
Chronic venous disease (CVD) affects a significant global population, yet its fundamental biological pathophysiology often remains siloed from clinical application. Endothelial dysfunction, oxidative stress, and venous wall remodeling are recognized as primary instigators of venous hypertension and valvular incompetence. This expert review aims to synthesize recent basic research on venous wall physiology and demonstrate its direct translational impact on modern diagnostic modalities and targeted therapeutics in phlebolymphology.
METHODS:
A comprehensive review of high-impact literature published between 2021 and 2026 was conducted, focusing on translational research in venous wall pathophysiology, genomics, and pharmacological interventions. Key mechanisms—such as shear stress mechanotransduction, inflammatory cytokine cascades, and quantitative trait loci (QTLs) linked to vascular pathogenesis—were systematically mapped against emerging diagnostic biomarkers and the efficacy of current systemic pharmacotherapies.
RESULTS:
Recent multi-omics data identify specific QTLs (e.g., VSTM2L, DPYSL2) that regulate vascular effector genes, yielding novel diagnostic biomarkers with high predictive accuracy. Basic science reveals that persistent oxidative and hemodynamic stress disrupts nitric oxide bioavailability and induces matrix metalloproteinase-driven venous wall remodeling. Understanding this microcirculatory breakdown validates the physiological efficacy of systemic venoactive drugs, which directly mitigate endothelial inflammation and oxidative damage at the cellular level. Furthermore, these physiological insights are accelerating the development of advanced, non-invasive molecular diagnostics capable of detecting early endothelial dysfunction before macroscopic venous reflux or structural damage occurs.
DISCUSSION:
Connecting the molecular and physiological alterations of the venous wall to macroscopic clinical manifestations shifts the CVD paradigm from a purely mechanical issue to a progressive biological disease. By integrating multi-omics and endothelial pathophysiology, clinicians can utilize biomarker-driven diagnostics and targeted pharmacological treatments much earlier in the disease progression, ultimately optimizing patient outcomes and defining the future of translational phlebology.

LS

Mechanochemical Ablation Using Flebogrif for the Treatment of Incompetent Saphenous Veins

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The Charm Vein Center, Korea

Mechanochemical ablation (MOCA) is a non-thermal, non-tumescent treatment option for incompetent saphenous veins that combines mechanical endothelial injury with sclerosant delivery, thereby avoiding thermal injury and tumescent anesthesia. This lecture will introduce the principles of MOCA and the clinical role of Flebogrif to Asian clinicians. Flebogrif is a distinct MOCA system that uses five retractable cutting elements and foam sclerosant, enabling rapid pullback, over-the-wire access, and a reduction in the actual liquid sclerosant volume compared with liquid-based systems, ClariVein. In our published experience, Flebogrif has shown favorable early and 1-year outcomes in the treatment of incompetent saphenous veins. In an early outcomes series including 113 saphenous veins, anatomical success rates were 97.3% at 1 month and 96.9% at 3 months, with no severe adverse events such as paresthesia or deep vein thrombosis and a rapid return to normal activity. In a subsequent 1-year study of 105 great saphenous veins, anatomical success was 100% at 1 month, 98.4% at 6 months, and 95.4% at 12 months, again without severe complications; venous severity and quality-of-life scores also improved significantly. Based on our comparative experience with ClariVein, the lecture will also discuss the practical features of Flebogrif that may influence outcomes, including sharper mechanical injury, the use of foam sclerosant, faster procedure time, possible cost advantages, and technical considerations such as repeated mechanical injury and treatment of multiple saphenous veins. Published evidence will be integrated with subsequent real-world experience to highlight patient selection, technique optimization, and expected outcomes in routine practice. In addition, procedural videos will be presented to illustrate device preparation, catheter positioning, release of the cutting elements, simultaneous pullback with foam injection, and practical tips for safe and effective treatment. This session aims to provide a practical and evidence-based framework for physicians preparing to adopt MOCA with Flebogrif.

* Flebogrif is not approval in Japan

SS-1-1

Activities and effects of a qualification system for elastic compression stocking and compression therapy appliers of the Japanese Society of Phlebology: Elastic stocking and compression therapy conductor (ESCC)

Makoto Mo, Takahiro Imai, Koutaro Suehiro, Hitoshi Sakuta

Committee of elastic stocking and compression therapy conductor Japanese society of Phlebology

The Japanese Society of Phlebology established a qualification system for elastic stocking conductors to promote proper usage of elastic compression stocking (ECS) and bandages for the treatment and prevention of venous disease, and treatment of lymphatic disease in 2002. About eight seminar per year (half day hands-on or web seminar) were held all over Japan with assistance of manufacturers and distributors of ECS and bandages. More than 3000 ESCC's certificates were issued after certain clinical experiences. ESC conductors are currently working in the outpatient clinics for treatment of venous and lymphatic disease and on inpatients wards for prevention VTE. ECS experts with good knowledge of ECS and diseases increase the compliance of ECS by meticulous consultation of the patients regarding compression therapy. Incidence of in hospital pulmonary embolism decrease by half after 2004, with increase of compression therapy in Japan

SS-1-2

Japanese Society of Phlebology Clinical Practice Guideline for Compression Therapy in Venous Diseases 2025

Makoto Mo, Nozomu Shirasugi, Hitoshi Sakuta, Hiroyuki Satokawa, Masayuki Hirokawa
Guideline Committee of Japanese Society of Phlebology

The Clinical Practice Guideline for Compression Therapy in Venous Diseases 2025, led by the Japanese Society of Phlebology (JSP), provides standardized recommendations for compression therapy in varicose veins, chronic venous insufficiency, venous leg ulcers, and deep vein thrombosis. The JSP conducted systematic reviews and meta-analyses of the literature, followed by the integration of expert consensus, to develop guidelines that are practical for clinical use. The development team consisted of 30 members from various fields, including nursing, dermatology, radiology, plastic surgery, vascular surgery, and cardiovascular surgery.

Clinical questions (CQs) were formulated, and recommendations were developed by selecting and reviewing key CQs for each CEAP clinical classification. The guidelines also include recommendations for compression therapy as prevention for venous thromboembolism and for post-treatment compression therapy following endovascular treatment of varicose veins. For each CQ, a team comprising a lead author, co-authors, and a coordinating committee member was formed to share responsibilities for literature searches, evidence assessment, and drafting the recommendations. Evidence collection targeted English and Japanese literature up to July 2023, involving the creation of tables of evidence, systematic reviews, and quantitative or qualitative meta-analyses. Recommendation classes and evidence levels were determined using the assessment methodology of the European Society of Cardiology as a reference.

SS-2-1

Treatment Strategies for Varicose Veins: Total GSV Ablation and Varicose Tributaries Ablation—The Importance of Preoperative Mapping and Technical Refinements

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Harukas KAWASAKI Clinic, Japan

[Purpose] For severe varicose veins with reflux extending to the lower calf, our institution performs total Great Saphenous Vein (GSV) and varicose tributaries ablation as a minimally invasive, one-stage radical treatment. Following the expansion of indications in 2024, varicose tributaries ablation has become increasingly significant. This report highlights the importance of preoperative mapping and technical refinements to prevent nerve injury and ensure efficiency, based on our experience with 6,000 EVLA cases.

[Methods] The study included 296 cases for distribution analysis and 56 for long-term follow-up. Using a Biolitec 1470 nm laser with a Radial Slim 2-ring fiber, ablation settings were 6 W/70 J for the thigh and 5 W/30 J for the calf and varicose tributaries.

[Results] Varicose tributaries distribution was 87% in the lower leg, primarily involving the posterior arch vein (49%) and anterior arch vein (26%). Persistent sensory impairment at one year was low (3–9%), and no major complications, such as skin burns or fiber fractures, were observed.

[Conclusions] Strategic preoperative mapping of the posterior and anterior arch veins is essential for rational ablation and improved radicality. Key refinements to prevent nerve injury include endoluminal puncture using short-axis imaging, sufficient TLA to separate nerves, and low-energy ablation (30 J) in the calf. Additionally, atraumatic device handling is crucial to prevent fiber fracture. Total GSV and varicose tributaries ablation is a safe and effective one-stage treatment. For incompetent perforating veins, concomitant use of subfascial PAPS (SAPS) is recommended.

SS-2-2 Endovenous Laser Ablation for Varicose Tributaries and Japanese Guidelines

Takashi Yamamoto
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In the treatment of varicose veins, performing concomitant treatment of tributaries in addition to the incompetent saphenous trunk is effective in achieving early symptomatic improvement and reducing the rate of re-intervention. While ambulatory phlebectomy and sclerotherapy are commonly employed, they present challenges such as surgical invasiveness, unfavorable results and technical difficulty.

To address these limitations, laser ablation for varicose tributaries (varicose vein ablation: VVA) has recently gained widespread acceptance in Japan. Following the acceptance, the Japanese Society of Phlebology has decided to establish a guideline for VVA. In the guideline, we employed some standardized protocols to avoid complications such as skin burn, nerve injury, and so on. The protocols include accurate intravenous positioning of Radial Slim 2-ring fiber appropriate injection of tumescent local anesthesia, and application of low-energy ablation with 5 W and 0.2 cm/sec, equivalent to a linear endovenous energy density (LEED) of 25 J/cm.

In this presentation, the versatile, safe, and promising aspects of VVA is elucidated.

IS-P1-1 Clinical Experience of the Treatment of Lateral Subdermal Venous Plexus (LSVP) Failure

Shintaro Shokoku, Gentaro Shokoku
Shokoku Shintaro Clinic, Japan

Introduction

Lateral subdermal venous plexus (LSVP) insufficiency has been associated with restless legs syndrome (RLS) and nocturnal muscle cramps (NMC), and several reports have described symptomatic improvement following sclerotherapy. We encountered three patients presenting with venous congestion symptoms due to isolated LSVP insufficiency without concomitant deep venous or saphenous venous incompetence, and observed marked symptomatic relief after sclerotherapy. We report these clinical experiences.

Methods and Results

Three female patients (ages 78, 40, and 84 years) were included. No obstructive or reflux lesions were identified in the saphenous or deep venous systems. LSVP insufficiency was diagnosed through visual inspection of the lateral lower limb and assessment using AccuVein® and a handheld Doppler device. CEAP classifications were: left C1$_2$sEpAsPrTel, LSVP; left C2sEpAsPrNSV, LSVP; and left C2sEpAsPrLSVP. Sclerotherapy was performed using 0.5% polidocanol foam prepared by the Tessari method, with injection volumes of 7 mL, 9 mL, and 6 mL, respectively. Two patients reported resolution of leg heaviness and swelling, and one patient experienced disappearance of a tightening, tingling sensation. All patients noted subjective symptomatic improvement.

Conclusion

Clinical evaluation of chronic venous insufficiency typically focuses on the deep and saphenous venous systems, and nonsaphenous disorders such as LSVP insufficiency are often overlooked. Although the pathophysiology of LSVP insufficiency remains unclear, previous reports have described symptomatic improvement in patients with isolated LSVP insufficiency presenting with RLS or NMC following sclerotherapy. Our experience supports these findings, and we present these cases along with a brief review of the literature.

IS-P1-2 Efficacy of an Intensified Early Surveillance Protocol on Patency and Cost After AV Access Thrombectomy

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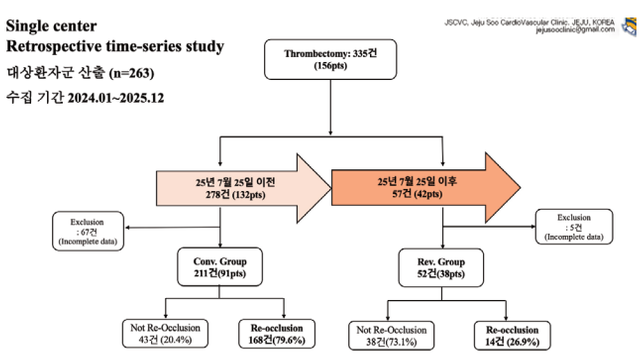
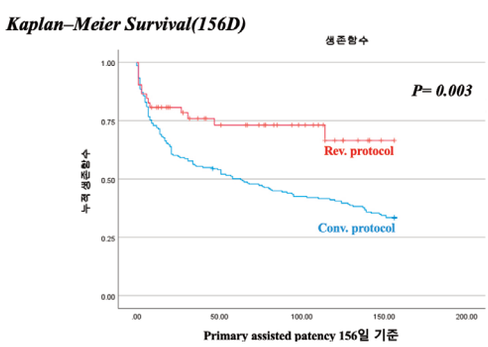
Introduction: High rates of early re-occlusion following thrombectomy for hemodialysis vascular access remain a significant clinical challenge. While current guidelines emphasize monitoring, specific post-intervention surveillance protocols are lacking. This study evaluated whether an intensified early follow-up protocol improves primary assisted patency and reduces the economic burden compared to conventional care.

Patients and Methods: We conducted a single-center, retrospective time-series study involving 263 thrombectomy cases (211 in the conventional group [Jan 2024–Jul 2025]; 52 in the revised group [Jul 2025–Dec 2025]). The revised protocol implemented structured early surveillance with ultrasound assessments at 1 day, 1, 2, and 4 weeks post-procedure, allowing for preemptive intervention upon detection of dysfunction. The primary endpoint was primary assisted patency, and the secondary endpoint was annual medical cost per patient. Survival analysis was performed using the Kaplan-Meier method and Log-rank test.

Results: Baseline demographics were comparable between groups, though access types varied. The revised protocol group demonstrated significantly lower cumulative re-occlusion rates compared to the conventional group at 30 days (21.2% vs. 41.2%, P=0.012) and 90 days (25.0% vs. 55.5%, P<0.001). Kaplan-Meier analysis confirmed superior primary assisted patency in the revised group (P=0.004). Notably, despite the increased frequency of outpatient visits, the mean annual medical cost per person was significantly lower in the revised group (8.25 million KRW) compared to the conventional group (9.28 million KRW, P<0.001), driven by a reduction in repeat salvage procedures.

Conclusion: An intensified early follow-up protocol significantly extends primary assisted patency by preventing early re-occlusion. Contrary to concerns regarding increased workload, this structured surveillance strategy proves to be cost-effective by reducing overall medical expenditures. These findings support the implementation of standardized post-thrombectomy surveillance as a clinically and economically viable standard of care.





IS-P1-3 Narrative Review of Venous Thrombosis in Aviation and Space Flight, the 4th report

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Background
Long-haul commercial flights are used by over 1 billion people annually, and one of the serious complications is thromboembolism. Furthermore, since asymptomatic thrombosis was reported in 2019 to the left internal jugular vein of a healthy astronaut, venous thrombosis during spaceflight has become a major problem. This review series has been presented at the 2025 Egyptian African Venous and Lymphatic Association Conference, the 2025 St Petersburg Venous Forum, and the 2025 Annual Meeting of the Japanese Society of Angiology. In this fourth report, we will discuss thromboembolism during aerospace flight, while also addressing the latest findings and considerations.

Methods
Studies from PubMed and Jstage from 2000 to 2025 were selected. This review is not systematic but focuses on the most important aspects.

Results
Strategies for preventing venous thrombosis during commercial aviation include drug prophylaxis using low molecular weight heparin for high-risk individuals, as well as non-pharmacological therapies such as compression stockings, exercise training, and hydration. Stratification of risk and stage-specific prevention methods are recommended. Due to the lack of randomized controlled trials on long-haul commercial flights, international conference guidelines recommend individualized interventions based on individual risk profiles.
In zero gravity, the blood flow dynamics of astronauts' internal jugular veins change, causing thrombosis in the left internal jugular vein to be a problem, but the exact cause and prevention methods remain unknown and research continues. Additionally, with the increasing frequency of commercial spaceflight, even ordinary people with medical histories are having more opportunities to fly. It is desirable to consider whether risk stratification measures for long-haul commercial flights can also be applied to spaceflight.

Conclusion
Changes in the situation are accelerating, including the rise of commercial spaceflights, the Artemis program aiming for the lunar surface again, and exploration of Mars. It was considered that there are many research tasks that we, as venous lymph specialists, should undertake, regarding how stresses such as gravity and radiation affect venous blood and lymph flow in complex and diverse extreme environments.

IS-P1-4 The safety and versatility of endo-venous laser ablation for leg varicose veins reaffirmed by the experience of tributary laser ablation

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[Objective] Until June 2024, the modalities to treat tributary varices at our institution had been varicectomy, sclerotherapy, and observation along with saphenous ablation. From June 2024, we started to perform tributary laser ablation for superficial tributary varices. With the retrospective study of 140 cases with tributary ablations, we report the initial results with new technical findings and concerns about this technique.

[Material and methods] During 18 months through December 2025, we perform 578 endo-venous ablations for leg varicose veins. Among 502 vases of laser ablations, 277cases (55.2%) were operated with simultaneous tributary treatments which included 130 laser ablations (47.0%), 81 varicectomies (29.2%), 48 sclerotherapies (17.3%), and 18 mixed maneuvers (6.5%). Tributary ablation was performed for varix with the diameter more than 3mm allowing laser fiber continuously placed in it. Pre- and intra- operative conditions and early results were compared between tributary ablation group and varicectomy group.

[Results] Pre-operative conditions did not show any statistically significant difference between two groups. Operative time was significantly longer in varicetomy group than tributary ablation group. No serious complication was recorded in both groups. Occlusion rates of treated tributaries were 100% in both groups.

[Conclusions] Tributary ablation was as safe and effective method as varicectomy. With doing tributary ablation, we had to learn fundamental and applied technique of laser ablation.

IS-P1-5 Clinical Evaluation of Redo Cases After Cyanoacrylate Closure for Saphenous Varicose Veins

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Objective
To evaluate the frequency and associated factors of cases requiring retreatment after cyanoacrylate closure (CAC) for lower extremity varicose veins.
Methods
A retrospective analysis was conducted on 705 limbs (great saphenous vein [GSV] and small saphenous vein [SSV]) treated with CAC between January 2020 and November 2025. The median patient age was 68 years, and 65.8% were women. CEAP classifications were: C2 (n=560), C3 (n=10), C4a (n=86), C4b (n=22), C5 (n=4), and C6 (n=11). A total of 123 limbs (17.4%) were classified as C4 or higher.
Results
Retreatment was required in 7 limbs (1.0%). The median time to retreatment was 694 days (range 85–1756 days). The retreatment rate was higher in SSV cases (2.9%, 4/136) compared with GSV cases (0.5%, 3/569), and SSV involvement was significantly associated with retreatment (OR 5.90, 95% CI 1.31–26.70, p=0.03). Retreatment occurred in 2.4% of limbs classified as CEAP C4 or higher (3/123), compared with 0.7% in C2–3 limbs (4/582), showing a trend toward higher retreatment rates in more advanced disease, although the difference was not statistically significant (OR 3.50, 95% CI 0.75–16.3, p=0.12).
Conclusion
Retreatment after CAC is rare; however, it occurs significantly more frequently in SSV cases and tends to be more common in patients with higher CEAP classifications.

IS-P1-6 Safety and Clinical Outcomes of Laser Ablation of Varicose Tributaries Using the Barbecue Technique

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Background
Current Japanese guidelines for laser ablation of varicose tributaries recommend intraluminal ablation. However, intraluminal access is often technically challenging in tortuous lesions. At our institution, the barbecue technique (BBQ technique), in which the vein is penetrated and ablated in a skewered manner, is applied to such tortuous tributaries. This study aimed to evaluate the safety and clinical outcomes of laser ablation of varicose tributaries using the BBQ technique.
Methods
Between January 2023 and December 2025, a total of 505 patients (634 limbs) underwent laser ablation of varicose tributaries. All puncturable varicose tributaries were ablated whenever possible. In tortuous lesions, intraluminal puncture was attempted first; when the needle could not follow the vein lumen, the BBQ technique was employed.
Results
The study included 330 women and 175 men, with a mean age of 59.5 ± 14.9 years. Preoperative CEAP classifications were C2 in 220 limbs, C3 in 216 limbs, C4 in 196 limbs, C5 in 16 limbs, and C6 in 14 limbs. Laser ablation of varicose tributaries was performed at a total of 2,346 sites, and the BBQ technique was used in approximately 30% of cases. The mean number of punctures per limb was 3.7 ± 3.2 (maximum 18), the mean treated length was 3.9 ± 3.3 cm (maximum 32 cm), and the mean linear endovenous energy density was 39.3 J/cm. Concomitant stab avulsion was performed in 100 limbs (15.7%). Complete occlusion of all treated varicose tributaries was confirmed postoperatively. Persistent sensory nerve injury lasting longer than one year was observed in one limb (0.15%). No severe complications, including skin burns, were noted.
Conclusions
Laser ablation of varicose tributaries using the BBQ technique enables effective treatment of tortuous lesions in which intraluminal puncture is difficult. This technique demonstrated a high occlusion rate with a low incidence of complications, indicating that it is a safe and effective treatment option.

IS-P2-1 A case of pulmonary artery stenting for recurrent solitary fibrous tumor in the pulmonary trunk after right pneumonectomy

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Case

A 66-year-old woman presented with exertional dyspnea and was referred to our institution after contrast-enhanced computed tomography (CT) revealed an intraluminal mass in the right pulmonary artery. She underwent right pneumonectomy with right pulmonary artery resection under cardiopulmonary bypass. Histopathological examination confirmed a solitary fibrous tumor. Nine months after surgery, local recurrence was detected in the pulmonary trunk. Repeat open surgery was considered high risk, and endovascular treatment was selected.

Procedure

The main pulmonary artery was accessed via the right femoral vein. Two balloon-expandable covered stents (VIABAHN® VBX, W. L. Gore & Associates) were deployed across the lesion. However, postoperative CT demonstrated incomplete coverage of the proximal tumor margin. Therefore, an additional self-expanding bare-metal stent (SMART Control®, Cordis) was implanted on postoperative day 11.

Outcome

The patient subsequently underwent radiotherapy and was discharged without procedure-related complications. Pulmonary artery restenosis was not observed until her death from multiple distant metastases 15 months after the endovascular intervention.

Conclusion

There are few reports describing endovascular treatment for intraluminal tumors in the pulmonary artery. Careful device selection is essential to minimize the risks of in-stent restenosis caused by tumor progression and pulmonary artery injury during stent deployment. In this case, pulmonary artery patency was successfully maintained, suggesting that endovascular intervention may serve as a feasible palliative treatment option for selected patients with unresectable pulmonary artery tumors.

IS-P2-2 Treatment Outcomes of Deep Venous Stenting at Our Institution

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Introduction: With the recent approval of thrombectomy devices and iliac venous stents in Japan, treatment options for deep venous disease have expanded. We retrospectively evaluated the clinical outcomes of deep venous stenting performed at our institution.

Methods: We retrospectively reviewed five consecutive patients who underwent deep venous stenting between June 2021 and November 2025. The mean age was 66.4 ± 12.4 years, and three patients (60%) were male. The target lesion was located in the iliac vein in four patients (80%) and in the subclavian vein in one patient (20%). The underlying etiologies included deep vein thrombosis (DVT) associated with iliac vein compression syndrome in three patients, external venous compression caused by lung cancer in one patient, and an arteriovenous fistula secondary to radiation injury in one patient. Four patients presented with lower extremity edema, while one presented with upper extremity edema. Two patients had recurrent DVT.

Three patients underwent venous stenting alone, one underwent thrombectomy followed by stent placement, and one underwent stent-graft implantation. The mean operative time was 80 ± 84 minutes. No patient required blood transfusion. One patient developed acute stent thrombosis on postoperative day 1 and was successfully treated with balloon angioplasty.

Results: The mean follow-up period was 18.6 ± 20 months. All patients remained on anticoagulation therapy throughout the follow-up period. Primary stent patency was maintained in all patients, and all experienced marked improvement in clinical symptoms.

Conclusions: Venous stenting provides excellent mid-term patency and significant symptom relief in carefully selected patients with symptomatic venous obstruction, particularly those with recurrent DVT associated with iliac vein compression syndrome.

IS-P2-3 A Case of a Soft Tissue Tumor Near the Greater Saphenous Vein Suspected to be a Venous Aneurysm

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BACKGROUND:
Soft tissue tumors of the peripheral extremities can be encountered in venous practice. It is useful to have knowledge of disease concepts.
METHODS (CASE STUDY):
The patient was a 75-year-old female who had noticed a small lump on the medial aspect of her right lower leg for several years. Recently, the lump began enlarging and causing pain that radiated to her toes upon palpation, prompting her to visit primary care physician. Suspecting a venous disorder, she was referred to our department.
A ultrasound revealed a well-defined, solid tumor approximately 8 mm in diameter adjacent to the great saphenous vein. No blood flow was detected within the tumor lumen, however, the tumor exhibited abundant blood flow supplied by feeding vessels from the periphery. No reflux was observed along the entire length of the GSV. Initially, the lesion was considered a venous aneurysm originating from the GSV. However, after additional imaging studies and epidemiological factors, a vascular leiomyoma was deemed the most likely differential diagnosis.
RESULTS:
A simple excision was performed under local anesthesia for both diagnostic and therapeutic purposes. Macroscopically, the excised tumor appeared as a milky white, glossy mass. Pathological examination revealed a benign soft tissue tumor composed of spindle-shaped cells. Immunohistochemical analysis showed that many tumor cells and normal peripheral nerve tissue were positive for S100 protein and negative for Desmin, α-SMA, C-kit, and CD34, consistent with a diagnosis of schwannoma.
DISCUSSION:
A schwannoma is a benign tumor of the peripheral nerves with a low risk of malignancy that can develop in various parts of the body. It causes localized tenderness and numbness, often accompanied by a positive Tinel's sign.
In many cases, simple resection is sufficient for the treatment, however, neurological symptoms may persist after resection, and caution is required depending on the location of the tumor.

IS-P2-4 Endovascular Recanalisation for Chronic Post-Thrombotic Iliofemoral Venous Occlusion: Clinical Improvement Beyond Technical Success

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Background

Chronic post-thrombotic iliofemoral venous occlusion causes significant morbidity including venous claudication, limb swelling, pain, and venous ulceration. While technical success following venous recanalisation is commonly reported, clinical improvement remains the key determinant of treatment success.1-2 This study evaluated the clinical and patency outcomes following endovascular intervention for chronic post-thrombotic iliofemoral venous occlusion.

Methods

A retrospective review was performed on consecutive patients undergoing endovascular intervention for symptomatic chronic post-thrombotic iliofemoral venous occlusion at a tertiary vascular centre. Chronic disease was defined as persistent symptomatic venous obstruction more than 6 months after index deep vein thrombosis. Procedures were performed using IVUS-guided wire recanalisation, balloon venoplasty, and venous stenting. Outcomes assessed included technical success, Villalta score, Venous Clinical Severity Score (VCSS), ulcer healing, primary patency, reintervention, and complications up to 12 months.

Results

Twenty-five patients underwent intervention during the study period. Mean age was 50.3 years and 48% were male. Active venous ulceration was present in 16% of patients. Technical success was achieved in all patients. Significant symptomatic improvement was demonstrated by reduction in mean Villalta score from 15.9 to 7.2 and VCSS from 13.9 to 6.8 at 12 months ($p<0.001$). All patients demonstrated improvement in pain, swelling, and venous claudication, while complete ulcer healing was achieved in all patients with active ulceration. Twelve-month primary patency was 80%, with reintervention required in 5 patients (20%). Reintervention occurred predominantly in patients requiring stent extension across the inguinal ligament (5/6 patients). No major bleeding, pulmonary embolism, stent migration, or mortality occurred.

Conclusion

Endovascular recanalisation and venous stenting for chronic post-thrombotic iliofemoral venous occlusion resulted in significant symptomatic improvement with acceptable mid-term patency and low morbidity. Patients with more severe pre-intervention post-thrombotic symptoms, reflected by higher Villalta scores, appeared to derive the greatest clinical benefit following intervention.

IS-P2-5 A case of abdominal aortic aneurysm complicated with deep vein thrombosis successfully treated with perioperative anticoagulation therapy and surgical treatment

Yuki Komura, Ryosuke Taniguchi, Hiroho Mori, Shigeto Tokunaga, Tessei Torikai, Takuya Kawahara, Kento Fujii, Tomonari Fujimori, Sho Kusadokoro, Kazunori Hashimoto, Mitsunori Nakano, Homare Okamura, Atsushi Yamaguchi
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Background

Deep vein thrombosis (DVT) caused by compression of the inferior vena cava (IVC) by an abdominal aortic aneurysm (AAA) is rare. We report a case of AAA complicated by DVT that was successfully managed with perioperative anticoagulation followed by open surgical repair.

Methods

A 70-year-old man presented with a one-month history of right lower leg swelling. An AAA was incidentally detected on computed tomography (CT), and he was referred to our department for further evaluation and treatment. Contrast-enhanced CT showed a 60-mm AAA compressing and narrowing the IVC, with thrombus extending from the stenotic segment to the distal veins of the right lower extremity. The patient was urgently admitted, and anticoagulation therapy with continuous intravenous heparin was initiated. Although placement of an IVC filter was considered because of the risk of pulmonary embolism, it was deferred due to concerns about procedure-related complications.

Results

The leg swelling gradually improved. Follow-up CT demonstrated marked resolution of the IVC thrombus despite persistent IVC compression by the aneurysm. Open AAA repair with prosthetic graft replacement was performed three weeks after initiation of anticoagulation therapy.

Intraoperatively, extensive intra-abdominal adhesions and focal erosion of the adjacent vertebral body were observed, suggesting the possibility of an inflammatory aneurysm. The postoperative course was uneventful, and the patient was discharged on postoperative day 12. Seven months after surgery, a residual thrombus was still observed from the right common femoral vein to the popliteal vein, and anticoagulation therapy remains ongoing.

Discussin

AAA-associated DVT is rare. In this case, perioperative anticoagulation enabled safe open surgical repair without IVC filter placement. Both mechanical IVC compression and aneurysm-related inflammation may have contributed to thrombus formation.

IS-P2-6 Chronic Venous Disease as the "Hidden Culprit" of Lower Extremity Discomfort: A Physiatrist's Perspective

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Introduction: In pain medicine, many patients with lower limb discomfort are primarily managed for spinal or musculoskeletal disorders. However, chronic venous disease (CVD) often mimics these conditions, leading to persistent symptoms despite conventional treatments. This study explores the role of CVD in chronic lower limb pain and its impact on muscle function, focusing on patients who respond poorly to standard rehabilitation and pain interventions.

Methods: We evaluated 215 patients (430 limbs) presenting with chronic lower-limb discomfort that remained refractory to spinal or musculoskeletal treatments for over 1 month. Patients were screened for characteristic symptoms such as cramping, heaviness, and evening-dominant swelling, followed by bilateral duplex ultrasonography. To quantify the functional impact of venous pathology, isokinetic testing of the ankle plantarflexors was measured and compared in 133 patients with unilateral symptoms.

Results: The most prevalent "pain-mimicking" symptoms were cramping (72.1%) and heaviness (67.9%). Notably, 33.0% of patients were classified as CEAP C0, indicating symptomatic disease without visible varicosities. Duplex ultrasound revealed reflux in 77.2% of patients, most commonly involving the distal segment of the great saphenous vein (43.3%). Isokinetic testing demonstrated a significant reduction in peak torque on the affected side ($p<0.05$), suggesting a clear association between venous reflux and calf muscle weakness.

Conclusion: CVD is a significant yet frequently overlooked contributor to chronic lower limb discomfort. Our findings indicate that venous pathology is closely linked to objective muscle weakness, which may hinder functional recovery. Pain specialists should look beyond the spine and nerves, incorporating venous assessment into their diagnostic framework to effectively identify and treat this "hidden culprit."

IS-P3-1 Repeated Recanalization of Varicose Vein after Cyanoacrylate Closure and Endovascular Laser Ablation, Successfully Managed by Varicectomy: A Case Report

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Background: Early recanalization after cyanoacrylate closure (CAC) or endovenous laser ablation (EVLA) for lower-extremity varicose veins is uncommon. Repeated recanalization after sequential endovenous treatments is particularly rare. We report a case of recurrent great saphenous vein (GSV) recanalization associated with incompetent perforator veins that was ultimately controlled by surgical varicectomy and perforator ligation. Case presentation: A 77-year-old woman with bilateral GSV varicose veins (CEAP classification: right C2, left C4a) underwent CAC. Duplex ultrasound at 1 week and 1 month post-op showed complete occlusion bilaterally. However, at 3 months, recanalization of the left GSV was identified, fed by a Dodd perforator and an incompetent calf perforator. At 5 months after CAC, EVLA using a 1470-nm radial 2-ring slim fiber was performed for the untreated below-knee GSV segment and tributary varicosities. Follow-up ultrasound 3 months later demonstrated slight recurrent recanalization at the same site. Because symptoms had temporarily improved, compression therapy was continued; however, progressive symptom recurrence prompted further intervention. One year after the EVLA, the patient underwent varicectomy near the Dodd perforator in the left thigh and ligation of three incompetent perforators in the left lower leg. Two months after the third procedure, duplex ultrasound showed no reflux, and symptoms resolved. Evaluation revealed no deep venous thrombosis or deep venous valvular incompetence, and magnetic resonance imaging from the abdomen to the lower extremities showed no apparent iliac compression or other lesions causing venous hypertension. Conclusion: This case highlights that persistent or recurrent reflux through incompetent perforator veins can contribute to repeated recanalization after endovenous treatment. When recanalization recurs despite CAC and EVLA, targeted surgical management, including varicectomy and perforator ligation, may provide durable symptom relief and control of reflux.

IS-P3-2 A case of cellulitis after endovenous laser ablation for varicose veins successfully treated with Vacuum Assisted Closure therapy

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We report a rare case of cellulitis following endovenous laser ablation (EVLA) for lower-extremity varicose veins. A 69-year-old man with bilateral great saphenous vein varicosities (CEAP class C2) underwent EVLA using a laser device. On postoperative day 5, he developed pain in the right thigh, followed by local heat on day 6 and fever of 38° C on day 7. He visited our outpatient clinic on day 10. Redness, warmth, and swelling were observed along the ablated vein from the right thigh to the medial calf, and thrombophlebitis was initially suspected. However, ultrasonography showed no evidence of endovenous heat-induced thrombosis or deep vein thrombosis. Oral anticoagulant therapy, cooling, and compression were started, but his symptoms worsened. On postoperative day 12, he was diagnosed with cellulitis and admitted to the hospital. Laboratory data showed WBC 10,700/μL, CRP 24.7 mg/dL, and D-dimer 5.8 μg/mL. Intravenous sulbactam/ampicillin was initiated. Incision and drainage were performed along the erythematous area on the medial side of the right knee, and culture of the purulent discharge revealed methicillin-sensitive Staphylococcus aureus. Antibiotic therapy was then changed to cefazolin. After improvement of the inflammatory signs, negative-pressure wound therapy using VAC Ulta was started on hospital day 7. Granulation progressed well, and VAC therapy was continued for 4 weeks. The patient was discharged on hospital day 37 with oral cephalexin, and no recurrence has been observed during outpatient follow-up. Cellulitis after endovenous thermal ablation is extremely uncommon. Although diagnosis and treatment were delayed, the patient recovered with antibiotics, drainage, and VAC therapy. Postoperative bathing in stored bathwater at home was considered the most likely source of infection.

IS-P3-3 Total foot care in our regions is associated with medical care of varicose veins

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BACKGROUND

Our hospital is the only facility in Suminoe Ward, Osaka City that performs endovenous treatment for lower extremity varicose veins. Our community, with an elderly population rate of approximately 30%, is an aging community that exceeds the national averages.

METHODS

Our hospital practices "Humanitude" as part of our elderly care. One of the four pillars of Humanitude is the skill of "standing," and it is important not only for preserving physiological functions and preventing bedriddenness but also as an expression of humanity. In short, this highlights the importance of lower limb function . Furthermore, in aspiration pneumonia which accounts for more than 70% of pneumonia cases among the elderly, swallowing function is influenced by posture. Lower limb function is strongly related to swallowing, because it is a series of whole-body movements involving muscle contraction, and depends on the positioning of the neck, trunk, and lower limbs. Lower limb circumference as a measure of muscle mass is assessed on the GLIM (Global Leadership Initiative on Malnutrition) criteria, used as diagnostic standards for malnutrition. It has been reported that osteoarthritis of the knee is associated with varicose veins in the lower limbs, and that treating varicose veins can alleviate knee symptoms. this further highlights the importance of lower limb function in relation to varicose veins. Symptoms of varicose veins make walking and standing up difficult, leading to a decrease in physical activity.

RESULTS

In daily clinical practice, appropriately examining and evaluating lower limb symptoms including varicose veins, and providing early intervention and continuous care is very important.

DISCUSSION

In today's aging society, isn't it time we thought what we can do to protect the lower limbs through varicose vein care, thereby contributing to the health of the elderly and their healthy life expectancy?

IS-P3-5 Total EVLT: Early Experience with a Comprehensive Single Session Laser Strategy

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Background

Endovenous laser therapy (EVLT) has become a standard minimally invasive treatment for saphenous vein reflux. In conventional practice, EVLT primarily addresses the incompetent truncal vein, while residual tributary varicosities are frequently treated with adjunctive procedures such as phlebectomy or sclerotherapy, often requiring additional treatment sessions. A strategy that treats both truncal veins and tributaries during a single endovenous procedure may simplify treatment and potentially improve cosmetic outcomes.

Methods

We present our early clinical experience with Total EVLT, a comprehensive single-session laser strategy designed to treat the refluxing venous network in patients with chronic venous insufficiency. Preoperative duplex ultrasound mapping was performed to identify refluxing truncal veins and associated tributaries. Procedures were performed using a 1940-nm endovenous laser system under ultrasound guidance. Sequential laser ablation was applied to the truncal vein followed by treatment of selected refluxing tributaries during the same procedural session.

Results

A total of 9 patients underwent the Total EVLT approach. Technical success was achieved in all cases. Postoperative duplex ultrasound confirmed successful closure of the treated truncal veins. Refluxing tributaries were treated endovenously during the same session without the need for adjunctive phlebectomy or sclerotherapy. No major perioperative complications were observed. Early clinical evaluation demonstrated satisfactory procedural outcomes and favorable cosmetic results.

Conclusion

Total EVLT represents a comprehensive endovenous strategy that extends laser therapy beyond conventional truncal ablation by addressing the refluxing venous network during a single minimally invasive session. This approach may streamline treatment pathways and reduce the need for staged interventions. Further studies with larger patient populations and longer follow-up are required to evaluate long-term outcomes.

IS-P3-6 A Case of Residual Reflux After Surgical Preservation of the Proximal Great Saphenous Vein with a Dodd Perforatorr

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Background:

In our institution, when varicose veins originating from an incompetent Dodd perforator are not associated with reflux in the great saphenous vein (GSV) proximal to the perforator, we preserve the proximal GSV and perform ablation up to 3 cm proximal to the Dodd perforator.

Case:

A 74-year-old woman was referred from the dermatology department after treatment for cellulitis of the left lower limb. After initial management with compression therapy, duplex ultrasound revealed varicose veins associated with reflux of the left GSV and an incompetent Dodd perforator. The GSV diameter was small, measuring 2.3 mm, and reflux at the saphenofemoral junction (SFJ) was minimal. However, definite reflux was observed in the mid-thigh segment. On preoperative duplex ultrasound performed by the operating physician, no definite reflux was detected either at the SFJ or in the mid-thigh GSV. Therefore, on November 25, radiofrequency ablation was performed from 3 cm proximal to the Dodd perforator to the below-knee varicose tributaries, while preserving the proximal GSV.

At 1 month after the procedure, duplex ultrasound showed no reflux in the GSV. However, at 1 year, recurrent reflux was detected in the preserved GSV. No recurrence of dermatitis was observed.

Discussion:

In this case, the proximal GSV was preserved because no definite reflux was detected immediately before surgery. However, recurrent reflux developed in the preserved segment during follow-up. This suggests that, in varicose veins associated with Dodd perforator incompetence, the proximal GSV may have latent valve dysfunction even when it is small in diameter and reflux is not consistently demonstrated.

Conclusion:

We experienced a case of recurrent GSV reflux after proximal GSV preservation in varicose veins associated with Dodd perforator incompetence. Ablation of the GSV proximal to the Dodd perforator should be considered even when the GSV diameter is small.

IS-P4-1 A case of proximal deep vein thrombosis triggered by pelvic lymphoceles infection following surgery for endometrial cancer

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[Background] Lymphocele is a known complication of pelvic lymphadenectomy. Some reports indicate that it occurs nearly in 30% of cases. When enlarged or infected, it can compress surrounding tissues and increase the risk of deep vein thrombosis (DVT). We report a case of central DVT induced by an infected pelvic lymphocele following surgery for endometrial cancer.

[Method] We searched PubMed for literature from the past 20 years using the terms "lymphocele", "infection", and "deep vein thrombosis."

An 80-year-old woman underwent a total hysterectomy and pelvic lymph node dissection for endometrial cancer. For the first 5 postoperative days, she received DVT prophylaxis with enoxaparin and compression stockings. At three weeks postoperatively, she developed left lower limb edema. Venous ultrasonography showed bilateral great saphenous vein reflux but no thrombus. At two months postoperatively, she was urgently admitted on suspicion of pelvic lymphocele infection. Contrast-enhanced CT revealed a 5-cm infected lymphocele near the left obturator lymph node; thrombotic occlusion of the left external iliac vein passing through this cyst confirmed central DVT.

[Result]

Ultrasound-guided drainage was performed, and Staphylococcus lugdunensis was detected in the culture. Antibiotic therapy with cefmetazole and anticoagulant therapy with apixaban were initiated. Follow-up CT on day 9 of treatment confirmed lymphocele shrinkage and thrombus resolution. After 4 weeks of intravenous antibiotics, the treatment was switched to oral medication, and she was discharged upon normalization of inflammatory markers. At 4 months postoperatively, CT showed lymphocele resolution without recurrence of tumor or DVT.

[Discussion] Gynecologic cancer surgery involving pelvic lymphadenectomy carries a high risk of DVT. In this case, mechanical compression by the lymphocele and the malignancy-associated hypercoagulable state likely induced the DVT. While early drainage and appropriate antibiotic therapy are effective for an infected lymphocele, the development of DVT also requires close clinical attention.

IS-P4-2 Percutaneous Thrombectomy Using a Large-Bore Sheath for Extensive Deep Vein Thrombosis Associated with Iliac Vein Compression Syndrome: A Three-Case Series

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Background:
Early thrombus removal in deep vein thrombosis (DVT) is important for preserving venous valve function and preventing post-thrombotic syndrome. However, complete removal remains difficult in extensive DVT extending from the popliteal to the iliac vein in patients with iliac vein compression syndrome. Surgical thrombectomy requires general anesthesia and may cause wound bleeding during anticoagulation. We report three patients treated by percutaneous thrombectomy using a large-bore sheath.
Patients:
The patients were women aged 44, 57, and 82 years, all presenting with painful swelling from the thigh distally. Contrast-enhanced computed tomography showed left iliac vein compression syndrome and DVT extending from the popliteal to the iliac vein. No thrombophilic disorder was identified.
Procedure and Outcomes:
Under local anesthesia, the common femoral vein was punctured antegradely under ultrasound guidance. A pre-closure suture was placed using Perclose ProGlide, followed by insertion of a 20-Fr DrySeal sheath. A 7-Fr sheath was inserted into the small saphenous or soleal vein. Iliac thrombi were removed by aspiration and a 5-Fr Fogarty catheter through the 20-Fr sheath. Through the lower-leg access, thrombi were swept centrally from the femoral vein into the iliac vein and extracted through the large-bore sheath. A venous stent was then placed across the compressed common iliac vein, and hemostasis was achieved using the pre-closure suture.
No patient required transfusion, and no access-site or other bleeding complications occurred. Unrestricted ambulation was permitted the next morning. A small pulmonary embolism confined to one subsegmental branch occurred in one asymptomatic patient. Edema resolved completely in two patients; mild ankle edema persisted in one patient treated approximately three weeks after symptom onset.
Conclusion:
Large-bore sheath thrombectomy enabled percutaneous thrombus removal from the popliteal to the iliac vein under local anesthesia with minimal blood loss. This technique may be a safe and effective option for reducing post-thrombotic syndrome.

IS-P4-3 Microgravity and Space Radiation Effects on Microvascular and Lymphatic Systems: A Narrative Review

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BACKGROUND:
Long-duration spaceflight exposes astronauts to microgravity and cosmic radiation, both of which may adversely affect the cardiovascular, lymphatic, and ocular systems. Microgravity induces headward fluid shifts and alters hemodynamic forces, whereas space radiation promotes oxidative stress and endothelial injury. The combined impact of these stressors on microvascular and lymphatic function remains incompletely understood.

METHODS:
A narrative review of PubMed-indexed literature published through May 2025 was conducted. Search terms included microgravity, spaceflight, radiation, vein, lymphatic, and ocular. Human, animal, and in vitro studies evaluating the effects of either or both stressors on microvascular, lymphatic, or ocular function were included.

RESULTS:
Microgravity promotes cephalad fluid redistribution, increases venous congestion, and reduces the effectiveness of skeletal muscle and respiratory pumps that normally support venous and lymphatic drainage. These changes have been associated with optic disc edema, globe flattening, and mild elevations in intracranial pressure characteristic of Spaceflight-Associated Neuro-Ocular Syndrome (SANS). Space radiation induces oxidative stress, endothelial dysfunction, and increased vascular permeability. Combined exposure may exacerbate tissue edema, disrupt blood-retinal and blood-brain barrier integrity, and impair lymphatic and glymphatic clearance. Experimental evidence suggests that venous congestion under microgravity may amplify radiation-induced endothelial injury.

DISCUSSION:
Microgravity and space radiation appear to act synergistically to impair microvascular and lymphatic homeostasis. Endothelial glycocalyx dysfunction may represent a missing mechanistic link connecting fluid redistribution, endothelial injury, lymphatic overload, and the development of SANS. Current countermeasures, including lower body negative pressure, exercise, and environmental CO_2 control, primarily target fluid redistribution. Future strategies may also need to consider protection of the vascular endothelial surface layer and lymphatic function during long-duration missions.

IS-P4-4 Pelvic Congestion Syndrome in Disguise: Refractory Lower Extremity Venous Insufficiency and Urinary Retention in an Octogenarian

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Purpose:

Pelvic congestion syndrome (PCS) is rarely considered in elderly patients and may present without pelvic pain. We report an atypical case presenting as refractory lower extremity venous insufficiency and urinary retention.

Methods:

An 84-year-old female with years of chronic venous insufficiency (bilateral edema, varicosities, leg pain, heaviness) refractory to compression therapy and venoactive medications was evaluated. She also had persistent urinary retention despite prior management. Given refractory symptoms, PCS was suspected and pelvic venography performed.

Results:

Venography demonstrated dilated pelvic veins with predominant right-sided congestion draining into a dilated left ovarian vein and a tributary of the right internal iliac vein. Coil embolization of the left ovarian vein with adjunctive sclerotherapy using a sandwich technique was performed, along with embolization of a right internal iliac vein tributary. Completion venography confirmed successful devascularization with preserved normal venous outflow. At one-month follow-up, the patient showed improvement in urinary retention and reduction in lower extremity edema and venous symptoms.

Conclusions:

PCS may present in elderly patients as refractory lower extremity venous insufficiency and urinary symptoms rather than pelvic pain. Recognition of this atypical presentation is essential, particularly in patients unresponsive to standard therapy, as endovascular treatment can lead to meaningful clinical improvement.

IS-P4-5 A Case of Staged Treatment for a Right Popliteal Venous Aneurysm Associated with Lower Extremity Varicose Veins

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BACKGROUND:
Popliteal venous aneurysms (PVAs) are rare vascular disorders that may cause deep vein thrombosis (DVT) and pulmonary embolism (PE). Although PVAs are frequently associated with lower extremity varicose veins, the relationship between these conditions and the optimal treatment strategy remain unclear. We report a case of a PVA associated with varicose veins that was successfully treated using a staged surgical approach.
METHODS:
A 64-year-old woman presented with varicose veins, skin pigmentation, and induration of the right lower leg. Laboratory tests revealed elevated FDP (13.6 μg/mL) and D-dimer (8.55 μg/mL) levels. Duplex ultrasonography demonstrated reflux and dilation of the right great saphenous vein (maximum diameter, 10.7 mm) and a right PVA measuring 32 × 21 mm with intraluminal thrombus. Computed tomography confirmed a 30-mm dilatation of the popliteal vein without PE. The patient was diagnosed with a right PVA complicated by DVT and varicose veins. Edoxaban therapy was initiated preoperatively. To preserve collateral venous drainage in the event of postoperative venous obstruction, a staged treatment strategy was planned.
RESULTS:
The first procedure consisted of tangential aneurysmectomy with lateral venorrhaphy reinforced in a sandwich fashion using bovine pericardial patches. The final venous diameter was reduced to 13 mm. Postoperative imaging demonstrated aneurysm shrinkage but residual DVT distal to the aneurysm; therefore, anticoagulation therapy was continued. The patient was discharged on postoperative day 14. After confirmation of thrombus resolution, endovenous laser ablation of the great saphenous vein and concomitant phlebectomy were performed 64 days after the initial operation. The postoperative course was uneventful.
DISCUSSION:
PVAs are associated with a substantial risk of thromboembolic complications and generally require surgical treatment. Because concomitant varicose veins may function as collateral venous drainage, staged treatment may be beneficial when postoperative venous obstruction is a concern. In this case, staged surgical management enabled successful treatment of both the PVA and associated varicose veins without serious complications.

IS-P4-6 Can tributary varices improve with truncal ablation alone?ą A study of ablation range beyond the tributary junction

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Background

The necessity of concomitant tributary treatment during endovenous truncal ablation for varicose veins remains controversial. This study evaluated changes in tributary reflux and diameter after truncal ablation alone extending distal to the tributary junction.

Methods

This retrospective study included patients who underwent endovenous truncal ablation without tributary ablation or stab avulsion. The main analysis included tributaries with preoperative reflux and postoperative month 6 (POM6) evaluation. The primary endpoint was tributary reflux at POM6. Diameter changes were analyzed in residual tributaries measurable both before treatment and at POM6.

Results

Among 141 patients (179 limbs), 252 tributaries were included in the main analysis. At POM6, 115 tributaries were no longer visualized, 80 showed no reflux, and 57 had residual reflux. **Reflux resolution (including non-visualized tributaries) was observed in 195/252 tributaries (77.4%).** Diameter analysis included 45 residual tributaries. Median tributary diameter decreased from 3.3 mm to 1.9 mm, and reduction was observed in 44/45 tributaries without enlargement. Diameter reduction was also observed in tributaries with residual reflux.

Discussion

Truncal ablation alone extending beyond the tributary junction was associated with improvement of tributary reflux and reduction of tributary diameter without direct tributary intervention. Additional tributary treatment may not be routinely required at the initial procedure and should be considered individually according to clinical symptoms and cosmetic concerns.

IS-P5-1 A case of bovine pericardial patch plasty after resection of inferior vena cava with tumor thrombus of renal cell carcinoma

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[Background] Approximately 4–10% of renal cell carcinomas(RCC) invade the inferior vena cava(IVC)[1]; to perform curative surgery, it is necessary to remove tumor emboli and to resect and reconstruct the wall of IVC. We report a case in which we performed IVC patch reconstruction using bovine pericardium for RCC with tumor emboli.
[Case] A 76-year-old man presenting with a 7 cm carcinoma in the right kidney and a tumor embolus in IVC. We performed right radical nephrectomy, thrombectomy and reconstruction of IVC. For the reconstruction, we shaped bovine pericardium (XenoSure) into a 3-cm-wide spindle-shaped patch approximately 10 cm in length. Intraoperative ultrasound was performed to confirm the absence of residual tumor emboli or dissemination. The operative time was 9 hours and 47 minutes; blood loss was 3,215 ml, and the volume of blood transfused was 2,580 ml. The patient was discharged on the 14th postoperative day. The pathological diagnosis was clear-cell RCC, pT3b, Ly0, v1, with a positive venous margin and pN0. The patient underwent 8 courses of adjuvant chemotherapy. Three years have passed since surgery, and no recurrence or inferior vena cava stenosis has been observed.
[Discussion] For RCC accompanied by tumor emboli in IVC, radical surgery requires the resection of the tumor emboli, including the infiltrated vascular wall. It is important to maintain adequate venous return without IVC stenosis. We perform patch reconstruction using bovine pericardium or replacement using an ePTFE graft for cases in which more than 50% of IVC wall was resected. Bovine pericardium is a biologically derived material that may offer advantages in preventing infection[2]; its benefits include ease of shaping and suturing, as well as less invasiveness since it saves an autologous vein graft. Patch formation using bovine pericardium is considered a safe and useful method for IVC reconstruction.

IS-P5-2 A Case Series of Nine Patients with Popliteal Venous Aneurysm

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Background: Popliteal venous aneurysm (PVA) is a rare venous disorder associated with pulmonary embolism (PE). Because of its rarity, the optimal management strategy and postoperative follow-up remain uncertain. We reviewed our institutional experience with surgically treated PVAs.

Methods: We retrospectively analyzed nine patients who underwent surgery for PVA at our institution between 2003 and 2025. Clinical characteristics, operative findings, postoperative outcomes, recurrence, and follow-up data were reviewed.

Results: The mean patient age was 61.1 years, and three patients (33.3%) presented with PE. The mean aneurysm diameter was 30.7 mm. Five patients were diagnosed incidentally during duplex ultrasonography performed for evaluation of lower-extremity varicose veins. Aneurysmorrhaphy was successfully performed in most patients, while aneurysmectomy was required in two patients because the aneurysm originated from a branch of the popliteal vein. No perioperative complications occurred, and primary patency was 100%. During a mean follow-up of 26 months, three patients developed aneurysm recurrence, with a mean time to recurrence of 7.3 months (range, 4-11 months). No patient required reoperation.

Conclusions: Duplex ultrasonography plays an essential role in detecting PVAs, particularly during evaluation of varicose veins. Surgical repair is safe and provides excellent short-term outcomes; however, some patients had postoperative recurrence. Our findings suggest that careful surveillance for at least one year after surgery should be considered.

IS-P5-3

Investigation of Compression Pressure and Stiffness in Compression Therapy Using Elastic Bandages with Pressure Indicators

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Objective

Compression therapy is a fundamental treatment for venous insufficiency and lymphoedema; however, its clinical usage remains limited. Effective compression requires not only appropriate resting pressure but also adequate stretch stiffness to enhance the muscle pump during movement. While pressure indicator bandages facilitate pressure control, the compression pressure and stiffness of single- and multi-layer bandaging systems have not been fully evaluated. This study investigated compression pressure and stiffness, assessed by the Static Stiffness Index (SSI), in single- and multi-layer compression using pressure indicator bandages with differing elastic properties.

Methods

Six medical staffs with varying levels of experience applied elastic bandages to the lower leg of the same subject under Six compression conditions: (1)high-stretch elastic bandage with a pressure indicator (Elascott Tension Guide® at 30 mmHg, TG30), (2)TG at 45 mmHg (TG45), (3)a two-layer system comprising a low-stretch self-adherent elastic bandage and a cotton bandage with a pressure indicator (Jobst Compress 2®, 45 mmHg; Compri2); (4) TG30 combined with Compri2; and (5) TG45 combined with Compri2, (6) a two-layer system comprising a high-stretch self-adherent elastic bandage with a pressure indicator and a low-stretch padding bandage(Dualpress Tension Guide®, 40 mmHg; Dualpress). Compression pressure and SSI were measured at the B1 point on the medial lower leg in supine and standing positions. Group comparisons were performed using one-way analysis of variance.

Results

Layering of bandages produced a stepwise and significant increase in compression interface pressure both supine and standing positions ($p<0.05$). In contrast, no significant differences in SSI were observed among the compression conditions.

Conclusion

Pressure indicator–guided layering enables reliable adjustment of compression pressure independent of practitioner experience. However, further studies may be required to optimize to assess stiffness which was not reflected by SSI.

IS-P5-4

A Study of 13 Cases of Tumors Invading Central Veins Treated with Multidisciplinary Surgical Collaboration in Our Department

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Background:
Surgical resection of tumors invading the central veins often requires complex vascular reconstruction to achieve complete tumor removal while maintaining hemodynamic stability. Depending on the extent of tumor invasion, simple vena cava clamping may be sufficient; however, more advanced circulatory support, including cardiopulmonary bypass (CPB) with or without cardiac arrest, is occasionally required. Because these procedures are technically demanding, multidisciplinary collaboration involving cardiovascular surgeons plays a crucial role in achieving safe and effective surgical outcomes. This study aimed to evaluate our institutional experience with multidisciplinary surgery for tumors involving the central veins.
Methods:
We retrospectively reviewed 13 consecutive patients who underwent multidisciplinary tumor resection for malignancies involving the central veins between January 2012 and November 2025 at our institution. Patient demographics, primary diagnoses, surgical procedures, methods of vascular reconstruction, perioperative outcomes, and follow-up data were analyzed.
Results:
The mean patient age was 55.3 years (range, 42–78 years), with seven men and six women. The mean follow-up period was 25.2 months. Surgical collaboration involved the Departments of Urology (n=7), Gastrointestinal Surgery (n=4), and Obstetrics and Gynecology (n=2). Primary diseases included renal cell carcinoma (n=6), retroperitoneal sarcoma (n=2), intrahepatic cholangiocarcinoma (n=1), hepatocellular carcinoma (n=1), colorectal cancer with liver and lymph node metastases (n=1), uterine leiomyosarcoma (n=1), and ovarian vein leiomyosarcoma (n=1). Inferior vena cava (IVC) invasion was present in all patients, while one patient also had abdominal aortic invasion; no patient had direct right atrial invasion. CPB was used in eight patients, including five who required cardiac arrest. Abdominal aortic cross-clamping was performed in one patient to maintain hemodynamic stability. Right atriotomy was performed in five patients to facilitate complete tumor removal. IVC reconstruction consisted of primary closure in six patients, patch angioplasty in three, and prosthetic graft replacement in four. According to the Novick classification, one patient had Level I disease, five had Level II disease, and seven had Level IV disease. There were no in-hospital deaths, and no postoperative IVC occlusion was observed during follow-up.
Conclusions:
Eight of the 13 patients remain alive without recurrence of their primary malignancy. Among the five deceased patients, several achieved long-term survival of 3–5 years after surgery, suggesting that aggressive multidisciplinary surgical management with appropriate cardiovascular support can be performed safely and may contribute to improved long-term outcomes in selected patients with tumors involving the central veins.

IS-P5-5 A Case of Prosthetic Graft Bypass for an Arteriovenous Fistula Venous Aneurysm Caused by Repeated Puncture During Fistula PTA

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Background

Percutaneous transluminal angioplasty for arteriovenous fistulas (fistula PTA) is an effective treatment for stenosis in maintenance hemodialysis patients. However, repeated punctures at the same site and hemodynamic changes may lead to weakening of the venous wall and aneurysm formation. We report a case of a venous aneurysm of an arteriovenous fistula, considered to be caused by repeated punctures for fistula PTA, that was successfully treated with a prosthetic graft bypass.

Case Presentation

A 67-year-old woman with a 27-year history of maintenance hemodialysis for IgA nephropathy had undergone multiple fistula PTAs for a left forearm arteriovenous fistula. Three months before presentation, localized swelling developed on the venous side adjacent to the anastomosis. Ultrasonography suggested a pseudoaneurysm, and she was referred to our hospital for further evaluation and treatment.

Treatment and Clinical Course

Under local anesthesia, the aneurysm was resected and bypass reconstruction was performed using a 6-mm GORE® PROPATEN prosthetic graft with end-to-end anastomoses. Postoperatively, fistula blood flow was satisfactory, and the patient was discharged on postoperative day 4 without complications. Histopathological examination revealed marked thinning of the aneurysmal wall with loss of the tunica media and adventitia, findings consistent with venous degeneration caused by repeated puncture and chronic hemodynamic stress.

Conclusion

Repeated punctures for fistula PTA may contribute to venous aneurysm formation. In this case, prosthetic graft bypass was an effective treatment option. This case highlights the importance of puncture-site management and appropriate treatment strategies in long-term hemodialysis patients.

IS-P5-6 Recurrence of Varicose Vein after Endovenous Laser Therapy in a Tertiary Care Center: A Descriptive Cross-sectional

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Introduction: Varicosity is the common problem of various etiology having simple limb aching to worst complication like oedema, ulcer, and skin changes. Minimal invasive endovenous laser therapy is the noble procedure. The aim of the study is to find out the recurrence of varicose vein after laser therapy in a tertiary care center.

Methods: This descriptive cross-sectional study was done in 38 patients with varicosity of lower limb in a tertiary care hospital, from January 2019 to June 2019 after taking ethical clearance from institutional review committee. Convenience sampling was done. Data was collected and entry was done in Statistical Package for the Social Science software version 22, point estimate at 90% Confidence Interval was calculated along with frequency and proportion for binary data.

Results: We recorded 38 patients of ablated limb out of which none of the ablated veins showed recanalization in six months follow up. Twenty two (58%) patients were male and 16 (42%) patients were female with mean age of 40.26 years. Major bulk, 23 (60.5%) resumed activity in second postoperative day and only 1 (2.6%) patient waited for 5 days for normal activity with mean of 2.58 days postoperatively. 16 (42.1%) patients developed erythema or ecchymosis, 12 (31.6%) patients had induration along the long saphenous vein course, 7 (18.4%) patients had paresthesia, 2 (5.3%) patients had limb swelling and 1 (2.6%) patient had skin burn.

Conclusions: Endovenous laser ablation has very low rate of recurrence of varicosity and has minor complications.

IS-P5-7

Outcome of High Ligation combined with stripping and endovenous laser ablation of the great saphenous Vein: an early results of a single center Study

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Introduction: The classic intervention for saphenous vein varicosity has been Saphenous femoral junction ligation with stripping. But now endogenous laser ablations are recommended over surgery.

Method: This is the retrospective study of 122 patients, conducted for the period of one year in the department of Cardio Thoracic and Vascular Surgery of Bir Hospital, Nepal.

Results: Out of 122 cases, 84 were of Endovenous Laser Ablation, 31 cases Ligation and Stripping and 8 cases of sclerotherapy with complete success rate in all group. There was a one case of deep vein injury in Liagtion and Stripping group and one case of skin burn in Endovenous Laser Ablation group, along with other minor injuries.

Conclusion: Both group have complete success rate however, hospital stay of patients in Endovenous Laser Ablation group was shorter and reassumed daily activities earlier.

Keywords: Laser Ablation, saphenous vein varicosity.

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