The 2025 Chronic Venous Disease Management Playbook

Integrating New Guidelines, Evidence, and Innovations for the Modern Vascular Specialist

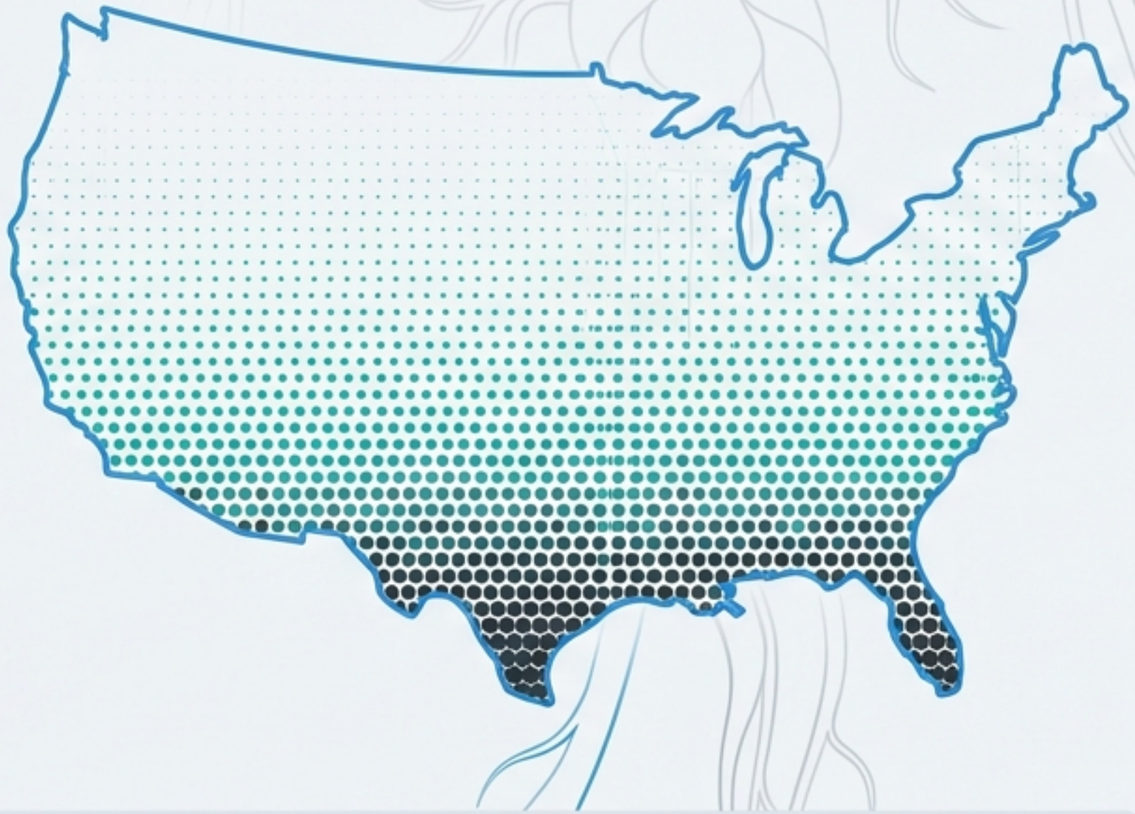
SCAI
Society for Cardiovascular Angiography & Interventions

SVM Society for Vascular Medicine

The Modern CVD Landscape: A Common Condition in the Spotlight

Over 25 Million

U.S. adults affected by Chronic Venous Disease (CVD), with prevalence increasing significantly after age 70.



High-Profile Case: The recent diagnosis of chronic venous insufficiency (CVI) in former U.S. President Donald Trump (age 79) after presenting with leg swelling has brought national attention to the condition.

- Diagnosis confirmed by bilateral Doppler ultrasound, with no DVT or heart failure.

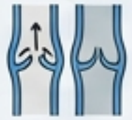
Key Insight: This case underscores CVI as a common, often under-discussed condition that requires a structured, evidence-based management approach.

A More Nuanced Pathophysiology: Structural vs. Functional Insufficiency

Structural Insufficiency (The 'Plumbing')

Definition: Physical impediments to venous return.

Causes:



Valvular Reflux
(incompetent valves)

Venous Obstruction
(post-thrombotic scarring, fibrosis)

Anatomical Compression
(e.g., May–Thurner syndrome)

Diagnosis: Primarily identified via Duplex Ultrasound.

Functional Insufficiency (The 'System Pressure')

Definition: Systemic or musculoskeletal issues that increase venous hypertension without primary vein damage.

Causes:

Elevated Central Pressures
(Obesity, OSA, Right Heart Failure)

Compromised Pump Function
(Weak calf muscles, limited ankle/foot mobility)

Lymphatic Dysfunction

Diagnosis: Primarily identified via history and physical exam.

Effective management requires assessing and treating both components. A duplex finding of reflux does not tell the whole story.

Anchoring Our Approach: The 2025 SCAI Evidence-Based Guidelines

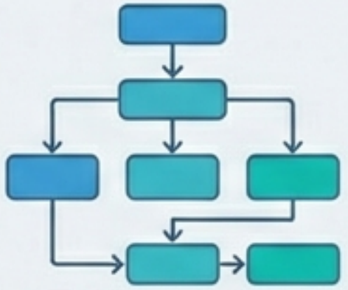
SCAI 2025

Key Features of the New Guidelines:

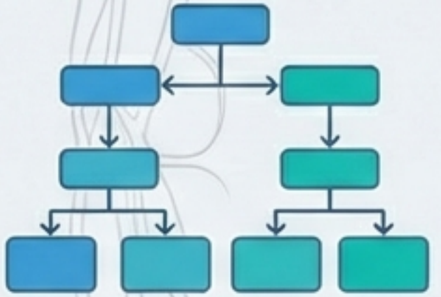
- Developed by a multidisciplinary panel using the rigorous **GRADE** (Grading of Recommendations Assessment, Development and Evaluation) methodology.
- Officially endorsed by the **Society for Vascular Medicine (SVM).**
- Provides **9 key recommendations** across 8 clinical scenarios.

Core Deliverable: Introduces two practical treatment algorithms to standardize care:

1. Management of Symptomatic Varicose Veins (C2-C4)

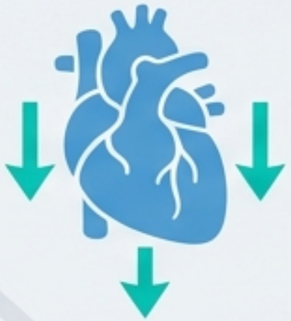


2. Management of Venous Ulcer Disease (C5-C6)



The Four Pillars of Foundational Management

The cornerstone of treatment is reducing venous hypertension by addressing the functional components of the disease.



Reduce Central Venous Hypertension

- Manage contributing conditions like obesity, obstructive sleep apnea, and right heart failure.
- Crucial medication reconciliation to identify drugs causing edema (e.g., calcium channel blockers, gabapentinoids).

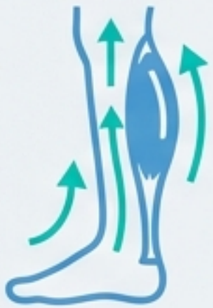
Compression Therapy

SCAI Recommendation:
Strongly recommended for patients with venous ulcers.

Conditionally recommended for symptomatic varicose veins.

Leg Elevation

Frequent periods of rest with legs elevated above heart level.



Exercise & Pump Function

Exercises involving calf and foot flexion/extension are crucial to activate the musculoskeletal pump, which ejects **100-150ml** of venous blood per contraction.

Guideline in Action: Superficial Venous Ablation

SCAI 2025 Guideline Recommendation:

Ablation therapy is **conditionally recommended** for patients with symptomatic reflux in the great saphenous (GSV), small saphenous (SSV), or anterior saphenous veins, particularly when conservative therapy fails or ulcers are present.
Note: Nonthermal techniques are preferred below the knee to reduce risk of nerve injury.

Evidence Snapshot: Comparing Ablation Modalities

Return to Activity (Days):

Overall Complication Rate:

Cyanoacrylate: 15.6% (Lowest)

Microwave: 44.1% (Highest)

(A simple horizontal bar chart visualizes these values for quick comparison).
Cyanoacrylate had no thermal injuries.

Patient Satisfaction (Score out of 5):

Cyanoacrylate: 4.8 (Highest)

Economic Barrier:
Cost of **Cyanoacrylate** is a treatment barrier for **65.6%** of patients.

A Critical Detail in Ablation Strategy: Reclassifying the Anterior Saphenous Vein

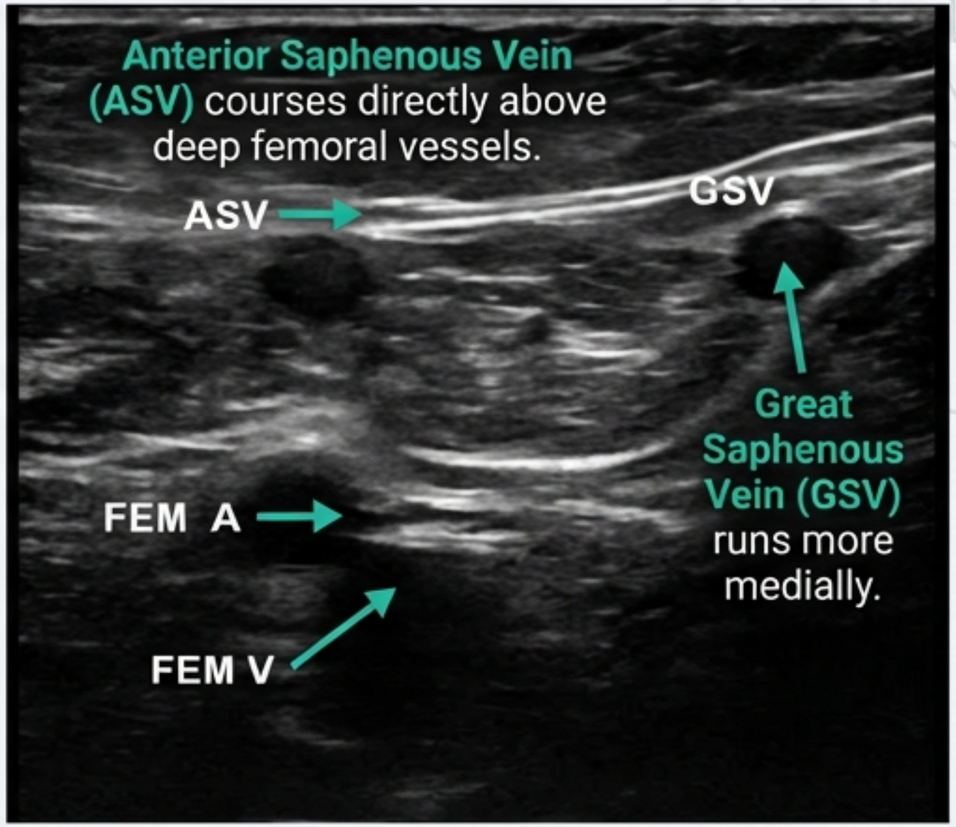
The Issue:

The historical term "anterior *accessory* saphenous vein" implies a tributary, leading to suboptimal treatment (e.g., phlebectomy instead of ablation) (e.g., phlebectomy instead of ablation) and inconsistent payer coverage.

The Consensus Shift:

- A 2024 joint position statement (AVLS, AVF, UIP) endorses dropping "accessory" and reclassifying it as the **Anterior Saphenous Vein (ASV)**, a true truncal vein.
- **Clinical Impact:** This supports truncal ablation as the optimal long-term treatment for ASV reflux.

Clinical Pearl: The 'Alignment Sign'



Key Takeaway: ASV reflux is a common source of primary symptoms (~20% of patients) and a leading cause of recurrence after GSV ablation.

Guideline in Action: Phlebectomy & Sclerotherapy

SCAI 2025 Guideline Recommendation:

Indication: **Conditionally recommended** for symptomatic varicose veins, either as a primary treatment (without truncal reflux) or after failed/completed truncal ablation.

Evidence: Associated with **faster symptom resolution**.

SCAI 2025 Guideline Recommendation:

Indications: **Conditionally recommended** for:

- **Symptomatic varicose veins** without significant truncal reflux.
- **Non-healing ulcers** resistant to compression therapy.

Evidence & Risks: **Effective** for symptom relief and cosmetic improvement. Known small risks include **DVT**, **skin pigmentation**, and **phlebitis**.

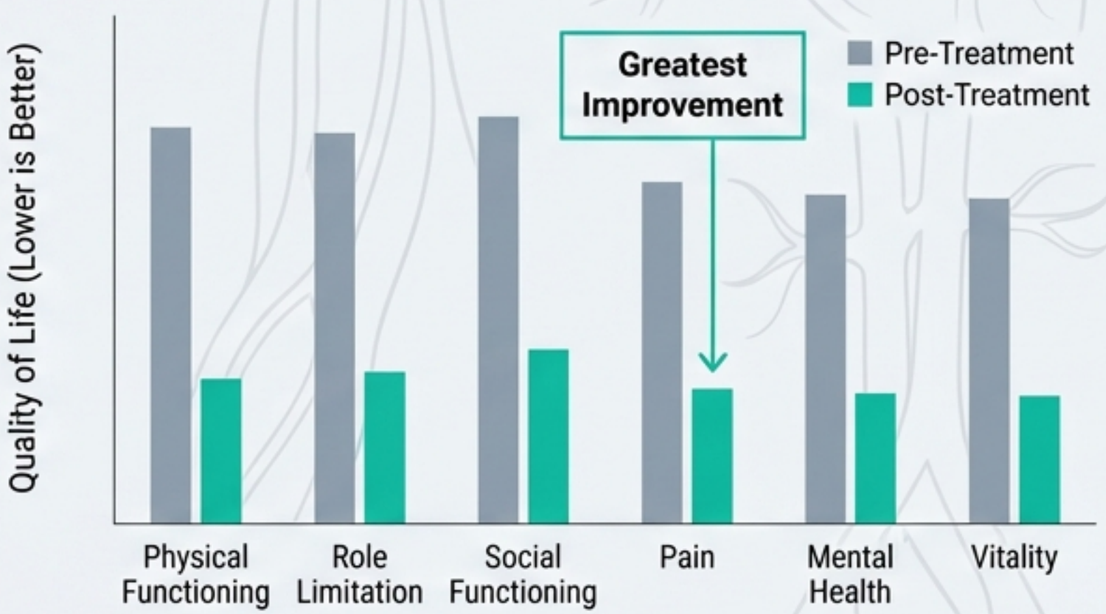
The Patient's Perspective: Quantifying the Impact of Intervention

The Clinical Reality: Many patients delay care. **79%** report experiencing symptoms for more than 1 year before seeking treatment.

The Proof of Benefit: Treatment with RFA and UGFS yields statistically significant improvements ($P < .001$) in both disease-specific and general quality of life.

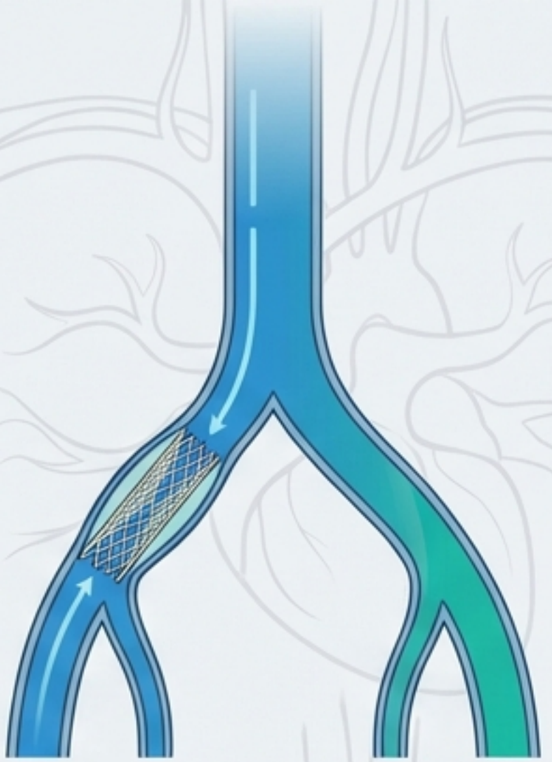
Disease-Specific Symptoms

General Quality of Life



Interventions provide tangible, measurable benefits that matter most to patients.

Advancing to the Deep System: Guideline-Informed Iliocaval Stenting



SCAI 2025 Guideline Recommendation:

Iliocaval stenting is conditionally recommended in patients with severe iliac vein obstruction (e.g., Non-Thrombotic Iliac Vein Lesions like May-Thurner syndrome) and **persistent, debilitating symptoms despite conservative therapy.**

- **Crucial Requirement**: Intravascular Ultrasound (IVUS) must be used for accurate lesion assessment and stent sizing.

Evidence Snapshot: Outcomes from a Review of 1,404 Limbs

74–98%
Long-Term Primary Patency

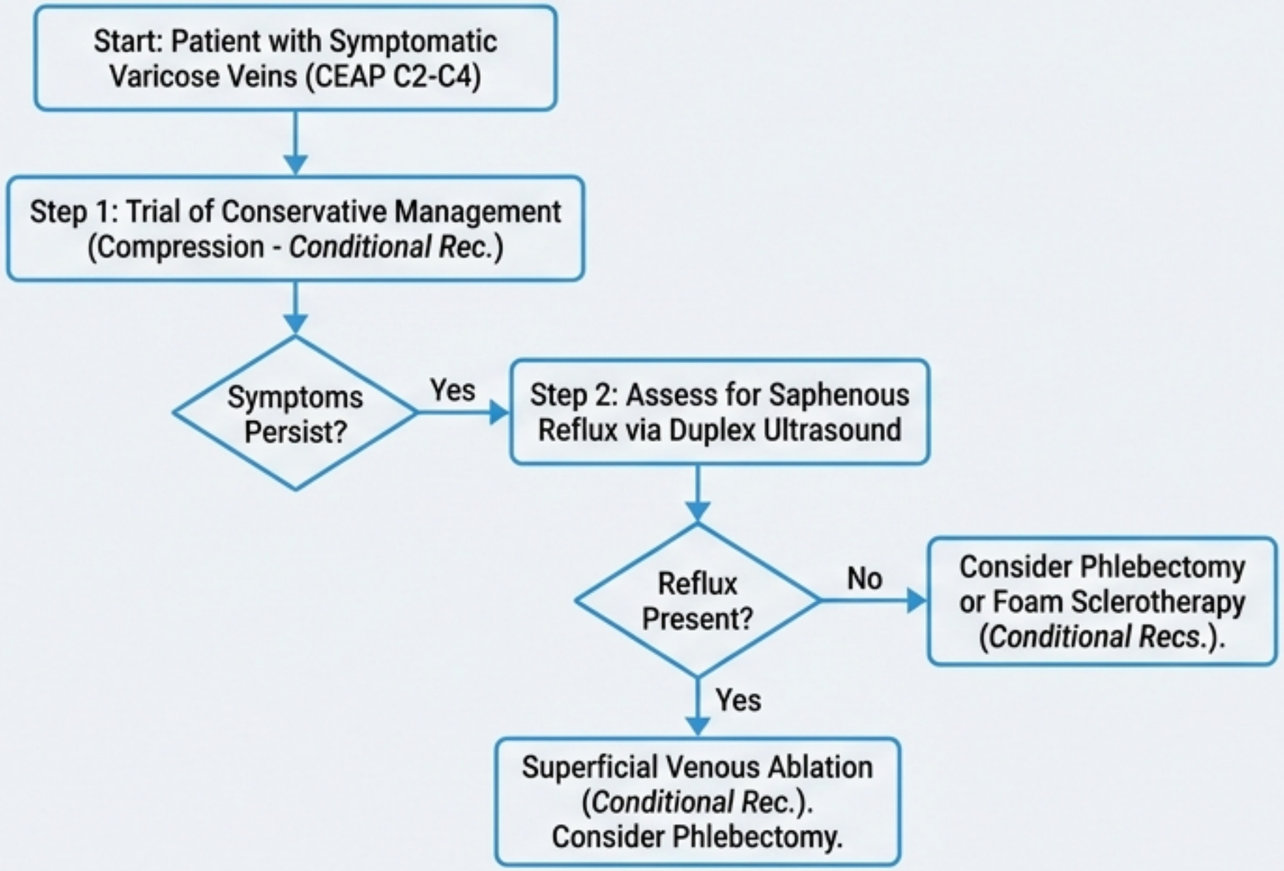
63–82%
Recurrence-Free Ulcer Healing

Significant Improvement
in VCSS and VAS Pain Scores

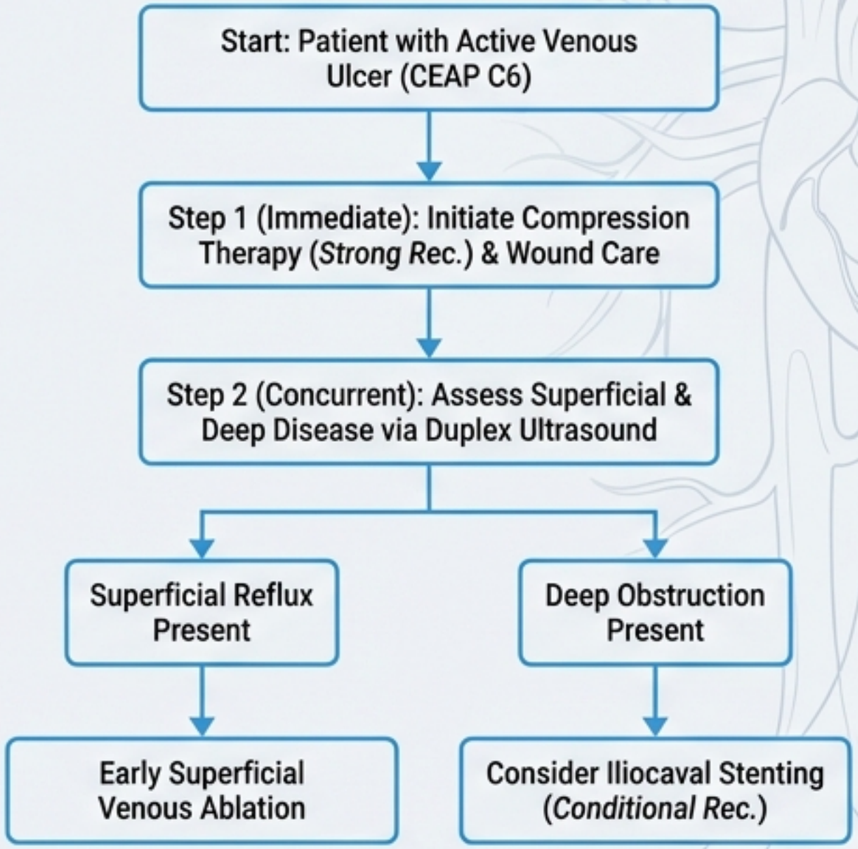
In appropriately selected patients with obstructive lesions, stenting provides excellent clinical and quality-of-life outcomes.

Clinical Decision Support: The 2025 SCAI Treatment Algorithms

Management of Symptomatic Varicose Veins (C2-C4 Disease)



Management of Venous Ulcer Disease (C5-C6 Disease)



Charting the Course Forward: Knowledge Gaps and the Next Frontier

Key Knowledge Gaps

Key Knowledge Gaps Identified by the SCAI 2025 Guideline Panel:

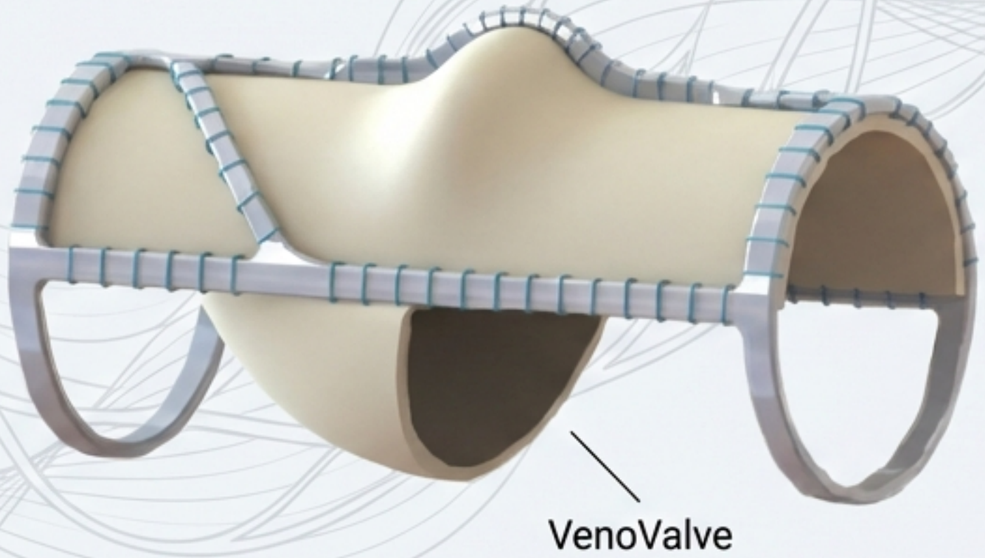
- The panel issued no recommendation for stenting in cases of post-thrombotic patients with isolated femoral or common femoral vein disease due to a lack of adequate evidence.
- The panel also identified three additional anatomical and clinical scenarios where future research is urgently needed to guide treatment.

The Next Frontier

The Next Frontier:

While guidelines have solidified our approach to superficial reflux and deep vein obstruction, a major unmet need remains: treating severe deep venous insufficiency (reflux).

A Breakthrough for Deep Venous Insufficiency: The VenoValve



The Innovation: The VenoValve (Enveno Medical) is a bioprosthetic, surgically implanted valve designed to treat CVI caused by deep venous valvular incompetency.

1-Year SAVVE Pivotal Trial Results (n=75):

98.4%
Device Patency

85%
Clinically Meaningful Benefit
(≥3 point rVCSS improvement)

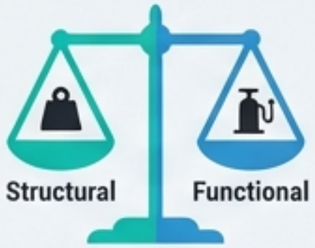
80%
Average Ulcer
Size Reduction

7.91
Point Average
rVCSS Improvement

"The most encouraging clinical data that have ever been produced for a bioprosthetic deep vein valve." — Manj Gohel, MD

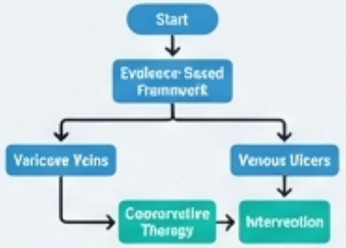
What's Next: A non-surgical, transcatheter-based version (Envve) is expected to begin pivotal trials in mid-2025.

Key Takeaways: The 2025 CVD Management Playbook



1. Holistic Assessment is Essential.

Diagnosis and treatment must account for both **Structural** (reflux, obstruction) and **Functional** (pump failure, central pressures) components of venous hypertension. Don't just treat the ultrasound findings.



2. Guidelines Provide a Clear Roadmap.

The new SCAI algorithms offer an evidence-based framework for managing both varicose veins and venous ulcers, prioritizing conservative therapy before advancing to intervention.

3. Patient-Reported Outcomes Justify Intervention.

Modern, minimally invasive procedures provide significant, measurable improvements in quality of life, pain, and physical function that matter deeply to patients.

4. Deep Venous Disease is the New Frontier.

While stenting has revolutionized the treatment of deep vein *obstruction*, emerging technologies like prosthetic valves (VenoValve) are poised to finally offer a solution for deep vein *insufficiency*.

Key References & Further Reading

1. **2025 SCAI Clinical Practice Guidelines for the Management of Chronic Venous Disease.** *J Soc Cardiovasc Angiogr Interv*. 2025. (PubMed ID: 41019905)

2. **Nonsurgical Management of Chronic Venous Insufficiency.** Fukaya E, Kolluri R. *N Engl J Med*. 2024. (DOI: 10.1056/NEJMcp2310224)

3. **General and disease-specific quality-of-life improvement following superficial venous insufficiency treatment.** Cappellano K, et al. *J Vasc Surg Venous Lymphat Disord*. 2025. (PMID: 41135796)

4. **One-year SAVVE trial results are ‘most encouraging data ever produced for a bioprosthetic vein valve’.** *Vascular News*. 2025.

5. **The anterior saphenous vein. Part 1. A position statement...** Meissner M, Boyle EM, et al. *J Vasc Surg Venous Lymphat Disord*. 2024.