

# Management of Varicose Vein in the Geriatric Population

Evidence-Based Diagnostic & Therapeutic Strategies

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# Presenter Profile



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# Definition & Pathophysiology

## Chronic Disease

A progressive venous disorder characterized by **reflux & hypertension**.

## Mechanical Failure

Tortuous **dilatation** of superficial veins due to structural **wall weakness**.

## Vascular Remodeling

Chronic hypertension induces **inflammation** and thin vessel walls.

*"Venous reflux induces a cycle of persistent venous hypertension and structural dilatation."*

# | Predisposing Factors

## Physiological & Genetic

- ⌘ Heredity & Family History
- 🕒 Age-related Degenerative Changes
- ♀ Female Gender (Hormonal Factors)

## Mechanical & Systemic






- 🚶 Prolonged Orthostatic (Standing/Sitting)
- ♥ Comorbidities: CHF, CKD, Liver Cirrhosis
- 📦 Obesity and Increased Intra-abdominal pressure

**Prevalence in Elderly: 50 – 60% in population > 60 y/o.**

# C-Score of CEAP Classification

Stage	Clinical Manifestations (C-Score)
C0	No visible or palpable signs of venous disease.
C1	Telangiectasia (Spider Veins) or Reticular Veins (< 3mm).
C2	Varicose Veins: Tortuous, dilated superficial veins (> 3mm).
C3	Edema, heaviness, and night cramping in lower limbs.
C4	Stasis dermatitis: Hyperpigmentation, Eczema, Lipodermatosclerosis.
C5 / C6	Bleeding; Healed Ulcer / Spontaneous unhealed venous ulcer.

## 靜脈曲張症狀分級表

							
級數	C0	C1	C2	C3	C4	C5	C6
症狀	<ul style="list-style-type: none"><li>健康的腿，無可見和可觸摸到的血管</li></ul>	<ul style="list-style-type: none"><li>出現蜘蛛絲或網狀靜脈</li></ul>	<ul style="list-style-type: none"><li>靜脈曲張腫大、蚯蚓狀、結節狀</li></ul>	<ul style="list-style-type: none"><li>腿部浮腫、半夜水腫抽筋、易麻、酸痛、沉重感、倦怠、僵硬感</li></ul>	<ul style="list-style-type: none"><li>腿部顏色改變、腿變黑或反白、有色素沉澱、濕疹、瘙癢、腳質白化症</li></ul>	<ul style="list-style-type: none"><li>腿部出現潰瘍，尚可癒合，但反覆發作</li></ul>	<ul style="list-style-type: none"><li>有傷口的出現，嚴重時需要截肢</li></ul>

# CEAP Classification

## Etiology

Ec: Congenital

Ep: Primary

Ex: Secondary

## Anatomy

Location of affected vein

- Superficial vein
- Deep vein
- Perforating vein

## Pathophysiology

Pr: venous reflux

Po: venous obstruction

Pr,o: reflux & obstruction

Pn: not identifiable

*"Venous reflux induces a cycle of persistent venous hypertension and structural dilatation."*

# | Diagnostic Gold Standards

## Color Duplex Ultrasound

The primary tool for assessing venous reflux and mapping anatomy.

## Plethysmography

Measurement of venous reflux and resistance (esp. in pelvis or lower abdomen).

## Cross-sectional Imaging

CT or MR Venography for complex central vein or deep vein assessments.

# Management Paradigm



## Conservative

Compression therapy  
(Stockings), Leg elevation,  
Weight control.



## Pharmacological

Venoactive drugs (MPFF:  
Daflon, Alvolon) to  
improve venous tone.



## Sclerotherapy

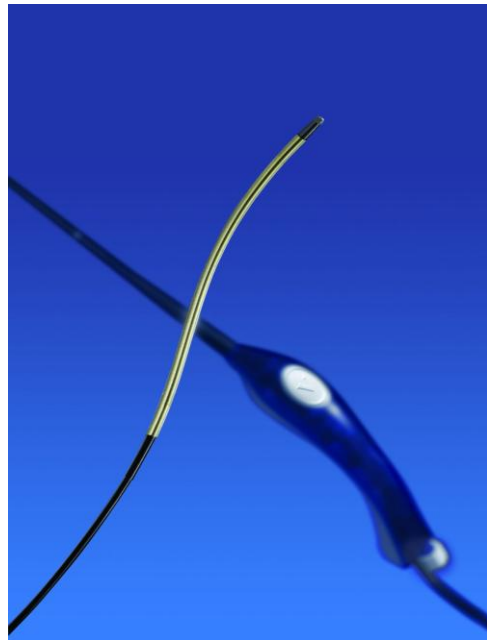
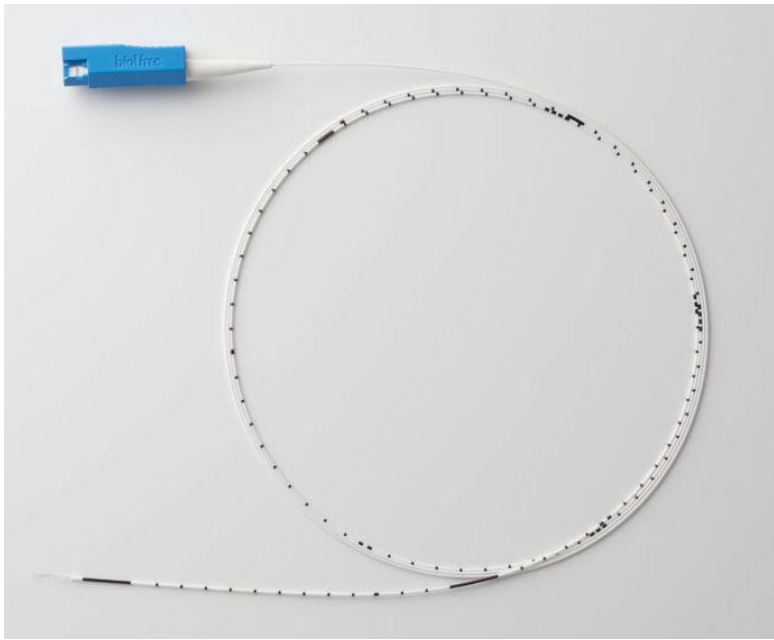
Chemical ablation for  
spider veins and small  
reticular veins.

**Surgical Indication: C3+ Severity with Symptomatic Trunk Varices.**

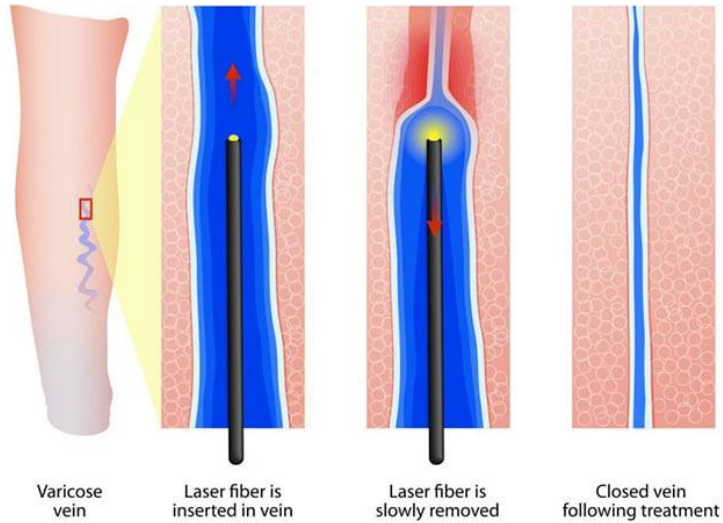
# Surgical Interventions

Method	Mechanism	Clinical Advantage
RFA / EVLT	Thermal ablation using radiofrequency or laser energy.	Low morbidity compared to traditional stripping.
VenaSeal (Glue)	Medical-grade cyanoacrylate to seal the vein.	<b>No tumescent anesthesia</b> required; rapid recovery.
Traditional Stripping	High ligation and physical removal of the GSV.	Proven efficacy for large-diameter varices.

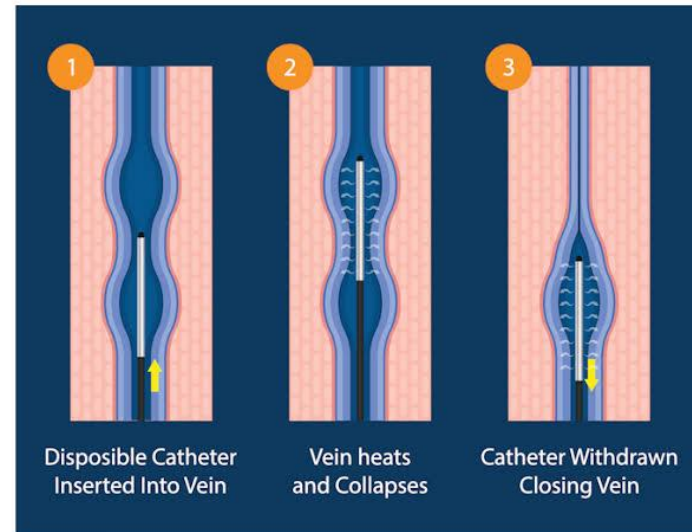
**Surgical contraindication: Deep vein thrombosis**



**ENDOVENOUS LASER ABLATION**



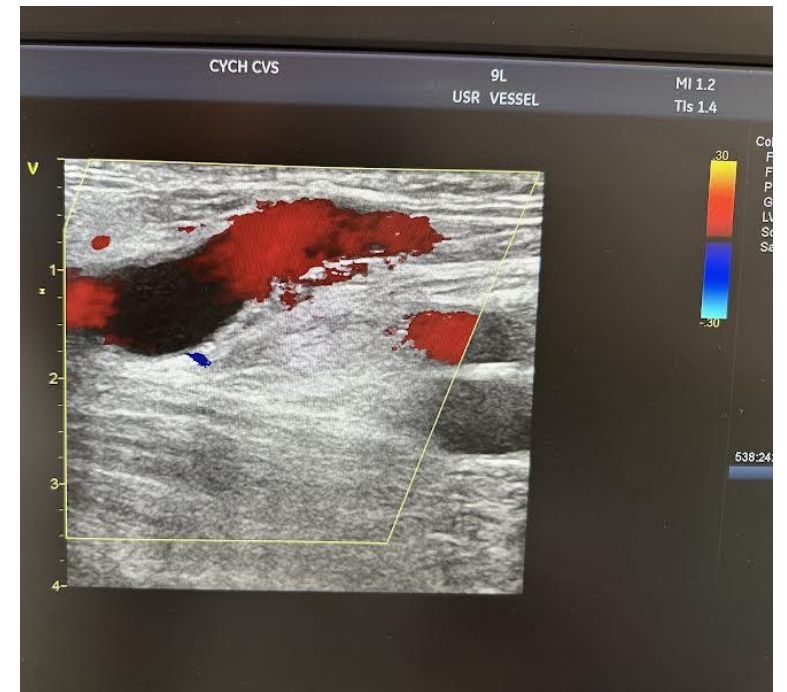
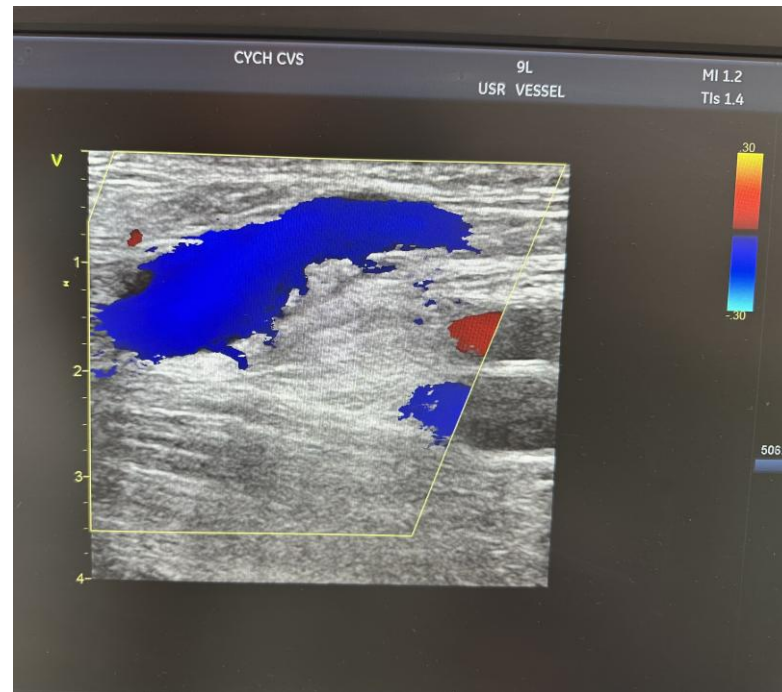
**RadioFrequency Ablation**



# ❖ Clinical Case

A 87 y/o female with chronic, active Rt ankle ulcer for 10+ yrs.

- PHx: PAF with SSS, s/p PPMI on 2013-07-08; insignificant CAD, LVEF 40%.
- VOVC: severe venous reflux in bil lower limb; normal venous resistance in bil lower limb.
- VenaSeal application is the most appropriate approach.



# | Key Takeaways

- ✓ Early diagnosis in the senior patients reduces risk of C5/C6 ulcers.
- ✓ Minimally invasive techniques offer safer profiles for frail patients.
- ✓ Holistic management must include lifestyle & compression protocols.

# Q & A

Thank you for your attention.

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