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Varicose Vein Management

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Related Policies (if applicable)
SUR701.015: Therapeutic Embolization and Vessel Occlusion to Treat Pelvic Conditions

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Coverage

Symptoms of Varicose Vein Insufficiency
ANY surgical treatment for varicose veins requires, at a minimum, that the individual is symptomatic with one or more of the following symptoms:

- Persistent aching/pain, cramping, burning, itching, or other symptoms significantly interfering with activities of daily living;
- Recurrent episodes of superficial phlebitis;
- Bleeding from a varicosity;
- Edema;
- Ulceration from venous stasis;
- Stasis dermatitis and its variations (e.g., lipodermatosclerosis).

NOTE 1: Applies to ALL sections below

- **CEAP (Clinical, Etiology, Anatomy, Pathophysiology) Class 2 varicose veins are defined as subcutaneous dilated vein(s) ≥ 3 mm in diameter (see Policy Guidelines).**
- **Surgical treatment of veins with clinical findings consistent with CEAP Class 1 (e.g., spider veins and telangiectasia) by ANY method is considered cosmetic (see Section III: Other, listed below).**

I. ENDOVASCULAR AND OPEN VEIN PROCEDURES

For the following veins:

- Greater saphenous vein,
- Small saphenous vein,
- Anterior accessory and posterior accessory great saphenous veins, and/or
- Perforator veins.

The following procedures:

- Vein high ligation, division and stripping,
- Subfascial endoscopic perforator surgery,
- Endoluminal radiofrequency ablation,
- Endoluminal venous laser ablation,
- Truncal ablation with cyanoacrylate (VenaSeal), excluding perforators,
- Truncal ablation with stabilized microfoam (Varithena), excluding use on small saphenous veins and/or perforators.

May be considered medically necessary when **ALL** the following conditions are met:

- The individual is symptomatic with one or more of the symptoms of varicose vein insufficiency (listed above); AND
- A duplex ultrasound study in the upright or reverse Trendelenburg position documents the following:
  a) Reflux >500 milliseconds of reversed flow in the superficial truncal veins (great saphenous vein, small saphenous vein, anterior accessory great saphenous vein, posterior accessory great saphenous vein and perforating veins).
  b) For perforating veins with a minimum CEAP clinical Class 2, there is a documented outward flow duration of >500 milliseconds and a diameter of 3.0 mm or greater throughout the segment to be treated.
- The individual has clinical findings consistent with:
  a) Class 2 or 3 on the CEAP Clinical Findings table as shown below, and has followed a program of conservative treatment including compression stockings, walking, leg elevation for at least 3 months which has not improved the symptoms (***See EXCEPTION #1 in Policy Guidelines)**; OR
  b) Class 4, 4a, 4b, 4c, 5, 6 on the CEAP Clinical Findings table 1. (Photos may be required); AND
  c) CEAP classification includes documentation of:

- The specific vein(s) that will be treated; AND
- The vein size; AND
- The anatomical classification/location of the vein(s) to be treated.

II. PHLEBECTOMY

Stab avulsion, hook phlebectomy, or transilluminated powered phlebectomy **may be considered medically necessary** when **ALL** the following conditions are met:

- The individual is symptomatic with one or more of the symptoms of varicose insufficiency (listed above); AND
- A duplex Doppler ultrasound study in the upright or reverse Trendelenburg position documents reflux >500 milliseconds of reversed flow in the vein to be treated and a diameter of 3.0 mm or greater throughout the segment to be treated; AND
- The individual has clinical findings consistent with:
  a) Class 2 or 3 on the CEAP Clinical Findings table as shown below, and has followed a program of conservative treatment including compression stockings, walking, leg elevation for at least 3 months which has not improved the symptoms (***See EXCEPTION #1 in Policy Guidelines**); OR
  b) Class 4, 4a, 4b, 4c, 5, 6, on the CEAP Clinical Findings table (see Policy Guidelines). (Photos may be required); AND
  c) CEAP classification includes documentation of:
     - The specific vein(s) that will be treated; AND
     - The vein size; AND
     - The anatomical classification/location of the vein(s) to be treated.

III. SCLEROTHERAPY

Sclerotherapy of the greater saphenous vein, small saphenous vein, and GSV accessory veins, either as a separate procedure or as an adjunct to the procedures described in Section I, **may be considered medically necessary** when **ALL** the following conditions are met:

- The individual is symptomatic with one or more of the symptoms of varicose insufficiency (listed above); AND
- A duplex Doppler ultrasound study in the upright or reverse Trendelenburg position documents reflux >500 milliseconds of reversed flow in the superficial truncal veins (great saphenous vein, small saphenous vein, anterior accessory great saphenous vein and posterior accessory great saphenous vein) and a diameter of 3.0 mm or greater throughout the segment to be treated; AND
- The individual has clinical findings consistent with:
  a) Class 2 or 3 on the CEAP Clinical Findings table as shown below, and has followed a program of conservative treatment including compression stockings, walking, leg elevation for at least 3 months which has not improved the symptoms (***See EXCEPTION #1 in Policy Guideline**s); OR
  b) Class 4, 4a, 4b, 4c, 5, 6, on the CEAP Clinical Findings table. (Photos may be required.); AND

c) CEAP classification includes documentation of:
    - The specific vein(s) that will be treated; AND
    - The vein size; AND
    - The anatomical classification/location of the vein(s) to be treated.

Sclerotherapy of the saphenous tributaries **may be considered medically necessary** when **ALL** the following conditions are met:

- The individual is symptomatic with one or more of the symptoms of varicose insufficiency (listed above); AND
- A duplex doppler ultrasound study in the upright or reverse Trendelenburg position documents:
    a) Reflux >500 milliseconds of reversed flow in the tributaries to be treated and a diameter of 3.0 mm or greater throughout the segment to be treated; OR
    b) Perforating veins with a documented outward flow duration of >500 milliseconds and a diameter of 3.0 mm or greater throughout the segment to be treated; AND
- The individual has clinical findings consistent with:
    a) Class 2 or 3 on the CEAP Clinical Findings table as shown below, and has followed a program of conservative treatment including compression stockings, walking, leg elevation for at least 3 months which has not improved the symptoms (***See EXCEPTION #1 in Policy Guidelines**); OR
    b) Class 4, 4a, 4b, 4c, 5, 6, on the CEP Clinical Findings table. (Photos may be required.)
    c) CEAP classification includes documentation of:
        - The specific vein(s) that will be treated; AND
        - The vein size; AND
        - The anatomical classification/location of the vein(s) to be treated.

Sclerotherapy **is considered cosmetic** for ANY of the following:

- Superficial veins <1 mm in diameter;
- Varicosities or reticular veins between 1 and <3 mm in diameter;
- To improve the appearance of a non-symptomatic leg.

Compressive isolated sclerotherapy for large, extensive or truncal varicosities **is considered not medically necessary** without ligation of the greater saphenous vein at the saphenofemoral junction, or the lesser saphenous vein at the saphenopopliteal junction.

Sclerotherapy of isolated tributary and/or perforator veins without prior or concurrent treatment of saphenous veins **is considered experimental, investigational and/or unproven** when the above criteria are not met.

IV. OTHER

The following techniques for the treatment of varicose veins **are considered experimental, investigational and/or unproven:**

- Mechanochemical ablation (e.g., ClariVein®);

- Endovenous cryoablation (cryolaser/cryosclerotherapy).

Surgical treatment of veins with clinical findings consistent with CEAP Class 1 (e.g., spider veins and telangiectasia) by **ANY** method **is considered cosmetic.**

Policy Guidelines

*** EXCEPTION #1: Contraindications to compression stockings (3):**

- Severe lower extremity atherosclerotic disease with ankle brachial index <0.6 and/or ankle pressure <60 mmHg.
- Extra-anatomic or superficially tunneled arterial bypass at the site of intended compression.
- Severe heart failure, New York Heart Association Class IV (fatigue, palpitations, dyspnea, and/or angina at rest).
- Heart failure New York Heart Association Class III and routine application of compression devices without clinical and hemodynamic monitoring, (New York Heart Association Class III: ordinary physical activity causes undo fatigue, palpitations, dyspnea and/or angina comfortable at rest).
- Confirmed allergy to compression material.
- Severe diabetic neuropathy with sensory loss or microangiopathy with the risk of skin necrosis. This may not apply to inelastic compression exerting low levels of sustained compression pressure (modified compression).

Table PG 1. CEAP Clinical Findings Classification of Chronic Venous Disease of the Lower Extremities (3)

CEAP Clinical (C) Class	
C0	No visible or palpable signs of venous disease
C1	Telangiectasias or reticular veins
C2	Varicose veins
C2r	Recurrent varicose veins
C3	Edema
C4	Changes in skin and subcutaneous tissue secondary to chronic venous disease
C4a	Pigmentation and eczema
C4b	Lipodermatosclerosis and atrophie blanche
C4c	Corona phlebectatica
C5	Healed ulcer
C6	Active venous ulcer
C6r	Recurrent venous ulcer
S	Symptomatic, including ache, pain, tightness, skin irritation, heaviness, and muscle cramps, and other complaints attributable to venous dysfunction
A	Asymptomatic

Etiological (E) class
Ep: Primary
Es: Secondary
Esi: Secondary - intravenous
Ese: Secondary - extravenous
Ec: Congenital
En: None identified.
Anatomical (A) class
As: Superficial
Ad: Deep
Ap: Perforators
An: No identifiable venous location
Pathophysiological (P) class*
Pr: Reflux
Po: Obstruction
Pr,o: Reflux and obstruction
Pn: No pathophysiology identified.

* Reporting of pathophysiological class must be accompanied by the relevant anatomical location; CEAP: Clinical, Etiologic, Anatomic, Pathophysiologic classification system; CVD: chronic venous disease. Each clinical class sub-characterized by a subscript indicates the presence (symptomatic, s) or absence (asymptomatic, a) of symptoms attributable to venous disease.

NOTE 2: CEAP 2 varicose veins are defined as subcutaneous dilated vein(s) ≥ 3 mm in diameter. (19)

NOTE 3: Reflux should be documented throughout the entire segment to be treated. Reflux in the saphenofemoral junction and/or saphenopopliteal junction ALONE does not qualify for treatment, as backward flow must extend down into the leg's vein system (axial reflux) rather than staying isolated at the junction.

Coding Guidance

- When stabilized microfoam ablation (Varithena) is used for truncal vein ablation CPT 36465 is used for a single vein treated in a leg and CPT 36466 is used when more than one vein is treated in the same leg.
- When stabilized microfoam ablation (Varithena) is used for sclerotherapy to treat non-truncal veins, CPT 36470 is used for a single vein in a single leg and CPT 36471 is used when more than one vein is treated in the same leg.
- For endovenous ablation procedures on perforators, CPT 36475/36478 is used for the first perforator treated and 36476/36479 is used for ALL other perforators treated in a single extremity.

Description

Venous Reflux/Venous Insufficiency

The venous system of the lower extremities consists of the superficial veins (this includes the great and small saphenous and accessory veins and/or duplicate veins that travel in parallel with the great and small saphenous veins), the deep system (popliteal and femoral veins), and perforator veins that cross through the fascia and connect the deep and superficial systems.

Duplicate great saphenous veins and true duplicate GSV systems are a rare occurrence. The duplicate GSV system will lie in the same plane, parallel to the skin, and run along the aponeurotic deep fascia. These two GSVs will also have the same diameter draining a common cutaneous territory. An anterior accessory vein is often mistaken for a duplication of the GSV, but the AASV is usually smaller and does not drain the same cutaneous territory as the GSV. A true duplicate GSV is not an accessory vein and should be treated as any other GSV. (1, 2)

One-way valves are present within all veins to direct the return of blood up the lower limb. Because venous pressure in the deep system is generally greater than that of the superficial system, valve incompetence at any level may lead to backflow (venous reflux) with pooling of blood in superficial veins. Varicose veins with visible varicosities may be the only sign of venous reflux, although itching, heaviness, tension, and pain may also occur.

Chronic venous insufficiency secondary to venous reflux can lead to thrombophlebitis, leg ulcerations, and hemorrhage. The CEAP classification of venous disease considers the clinical, etiologic, anatomic, and pathologic characteristics of venous insufficiency, ranging from class 0 (no visible sign of disease) to class 6 (active ulceration).

Treatment

A variety of treatment modalities are available to treat varicose veins and venous insufficiency including surgery, thermal ablation, sclerotherapy, mechanochemical ablation, cyanoacrylate adhesive, and cryotherapy. The application of each modality is influenced by the severity of the symptoms, type of vein, source of venous reflux, and the use of other (prior or concurrent) treatment. Conservative medical treatment may include elevation of the extremities, walking, compression, and wound care when indicated. (3)

Treatment of Saphenous Veins and Tributaries

Saphenous veins include the great and small saphenous and accessory saphenous veins that travel in parallel with the great or small saphenous vein. Tributaries are veins that empty into a larger vein. Treatment of venous reflux has traditionally included the following:

- Identification by preoperative Doppler ultrasonography of the valvular incompetence.

- Control of the most proximal point of reflux, traditionally by suture ligation of the incompetent saphenofemoral or saphenopopliteal junction.
- Removal of the superficial vein from circulation, e.g., by stripping of the great and/or small saphenous veins.
- Removal of varicose tributaries (at the time of the initial treatment or subsequently) by stab avulsion (phlebectomy) or injection sclerotherapy.

Minimally invasive alternatives to ligation and stripping have been investigated. These include forms of sclerotherapy, CAC and thermal ablation using cryotherapy, high-frequency radio waves (200-300 kilohertz), or laser energy.

Thermal Ablation
Radiofrequency ablation is performed using a specially designed catheter inserted through a small incision in the distal medial thigh within 1 to 2 centimeters of the saphenofemoral junction. The catheter is slowly withdrawn, closing the vein. Laser ablation is performed similarly. A laser fiber is introduced into the GSV under ultrasound guidance. The laser is then activated and slowly removed, along the course of the saphenous vein. Cryoablation uses extreme cold. The objective of endovenous techniques is to injure the vessel, causing retraction and subsequent fibrotic occlusion of the vein. Technical developments since thermal ablation procedures were initially introduced include the use of perivenous tumescent anesthesia, which allows successful treatment of veins larger than 12 millimeters in diameter and helps to protect adjacent tissue from thermal damage during treatment of the SSV.

Sclerotherapy
The objective of sclerotherapy is to destroy the endothelium of the target vessel by injecting an irritant solution (either a detergent, osmotic solution, or chemical irritant), ultimately occluding the vessel. Treatment success depends on accurate injection of the vessel, an adequate injectate volume and concentration of sclerosant, and compression. Historically, larger veins and very tortuous veins were not considered good candidates for sclerotherapy due to technical limitations. Technical improvements in sclerotherapy have included the routine use of Duplex ultrasound to target refluxing vessels, luminal compression of the vein with anesthetics, and a foam/sclerosant injectate in place of liquid sclerosant. Foam sclerosants are produced by forcibly mixing a gas (e.g., air or carbon dioxide) with a liquid sclerosant (e.g., polidocanol or sodium tetradecyl sulfate). Physician-compounded foam is produced at the time of treatment. A commercially available microfoam sclerosant with a proprietary gas mix is available that is proposed to provide a smaller and more consistent bubble size than what is produced with physician-compounded sclerosant foam.

Endovenous Mechanochemical Ablation (e.g., ClariVein®)
Endovenous mechanochemical ablation uses both sclerotherapy and mechanical damage to the lumen. Following ultrasound imaging, a disposable catheter with a motor drive is

inserted into the distal end of the target vein and advanced to the saphenofemoral junction. As the catheter is pulled back, a wire rotates at 3500 rpm within the lumen of the vein, abrading the lumen. At the same time, a liquid sclerosant (sodium tetradecyl sulfate) is infused near the rotating wire. It is proposed that MOCA allows for better efficacy of the sclerosant, and results in less pain and risk of nerve injury without the need for the tumescent anesthesia used with endovenous thermal ablation techniques (RFA, endovenous laser ablation [EVLA]).

Cyanoacrylate Adhesive (CAC; e.g., VenaSeal®)
A CAC adhesive is a clear, free-flowing liquid that polymerizes in the vessel via an anionic mechanism (i.e., polymerizes into a solid material on contact with body fluids or tissue). The adhesive is gradually injected along the length of the vein in conjunction with ultrasound and manual compression. The acute coaptation halts blood flow through the vein until the implanted adhesive becomes fibrotically encapsulated and establishes chronic occlusion of the treated vein. Cyanoacrylate glue has been used as a surgical adhesive and sealant for a variety of indications, including gastrointestinal bleeding, embolization of brain arteriovenous malformations, surgical incisions, or other skin wounds.

Transilluminated Powered Phlebectomy
TIPP is an alternative to stab avulsion or hook phlebectomy. This procedure uses 2 instruments: an illuminator, which also provides irrigation, and a resector, which has an oscillating tip and suction pump. Following removal of the saphenous vein, the illuminator is introduced via a small incision in the skin and tumescence solution (anesthetic and epinephrine) is infiltrated along the course of the varicosity. The resector is then inserted under the skin from the opposite direction, and the oscillating tip is placed directly beneath the illuminated veins to fragment and loosen the veins from the supporting tissue. Irrigation from the illuminator is used to clear the vein fragments and blood through aspiration and additional drainage holes. The illuminator and resector tips may then be repositioned, thereby reducing the number of incisions needed when compared with stab avulsion or hook phlebectomy. It has been proposed that TIPP might decrease surgical time, decrease complications such as bruising, and lead to a faster recovery than established procedures.

Subfascial Endoscopic Perforator Surgery
SEPS is a minimally invasive surgical procedure for the treatment of chronic venous insufficiency. Incompetent perforators in the calf are believed to be a contributing factor for leg ulceration(s). SEPS is performed as an alternative to the Linton procedure and is recommended in individuals whom conservative measures have failed. Guided by Duplex ultrasound scanning, small incisions are made in the skin, and the perforating veins are clipped or divided by endoscopic scissors. The surgery can be performed as an outpatient procedure. (4, 5)

Regulatory Status

In 2015, the VenaSeal™ Closure System (Sapheon, part of Medtronic) was approved by the U.S. Food and Drug Administration through the premarket approval (PMA; P140018) process for the permanent closure of lower extremity superficial truncal veins, such as the GSV, through endovascular embolization with coaptation. VenaSeal seals the vein using a cyanoacrolate adhesive agent. The VenaSeal Closure System is intended for use in adults with clinically symptomatic venous reflux as diagnosed by DUS. VenaSeal is not FDA approved for use on perforators. FDA product code: PJQ. (6)

In 2013, Varithena® (formerly Varisolve), a sclerosant microfoam made with a proprietary gas mix, was approved by the FDA under a new drug application (NDA; 205098) for the treatment of incompetent GSVs, accessory saphenous veins, and visible varicosities of the GSV above and below the knee. (7)

The following devices were cleared for marketing by the FDA through the 501(k) process for the endovenous treatment of superficial vein reflux:

- In 1999, the VNUS Closure® System, a radiofrequency device, was cleared by the FDA through the 510(k) process for "endovascular coagulation of blood vessels in patients with superficial vein reflux." (8) In 2005, The VNUS RFS® and RFSFlex® devices were cleared by the FDA for “use in vessel and tissue coagulation including treatment of incompetent (i.e., refluxing) perforator and tributary veins.” (9)
- In 2010, the modified VNUS Closure*Fast*® Intravascular Catheter was cleared by the FDA through the 510(k) process. (10) FDA product code: GEI.
- In 2002, the Diomed 810 nm surgical laser and EVLT® (endovenous laser therapy) procedure kit was cleared by the FDA through the 510(k) process, "...for use in the endovascular coagulation of the GSV of the thigh in patients with superficial vein reflux." FDA product code: GEX. (11)
- In 2005, a modified Erbe Erbokryo® cryosurgical unit (Erbe USA) was approved by the FDA for marketing though the 510(k) process. A variety of clinical indications are listed, including cryostripping of varicose veins of the lower limbs. FDA product code: GEH. (12)
- In 2003, the Trivex™ System (InaVein), a device for transilluminated powered phlebectomy, was cleared by the FDA through the 510(k) process for “ambulatory phlebectomy procedures for the resection and ablation of varicose veins.” FDA product code: DWQ. (13)
- In 2008, the ClariVein® Infusion Catheter (Merit Medical) was cleared by the FDA through the 510(k) process (K071468) for mechanochemical ablation. The system includes an infusion catheter, motor drive, stopcock, and syringe, and is intended for the infusion of physician-specified agents in the peripheral vasculature. FDA product code: KRA. (14)

Refer to accessdata.gov for any additional FDA approved products.

Rationale

This policy is based on a review of relevant professional guidelines and position statements.

American College of Phlebology

In 2016, the American College of Phlebology (15) updated their guidelines for the treatment of venous disease which include the following recommendations on Table 1.

Table 1. American College of Phlebology Recommendations

Recommendation	GOR
Treatment of Venous Disease	
Indications for treatment include pain or other discomfort (i.e., aching, heaviness, fatigue, soreness, burning), edema, varix hemorrhage, recurrent superficial phlebitis, stasis dermatitis, or ulceration. Patients should be evaluated using the CEAP classification and the Venous Clinical Severity Score and defines medically necessary as a CEAP classification of C2 or higher.	1A
All patients being considered for treatment must have a duplex ultrasound of the superficial venous system and at a minimum evaluation of the common femoral vein and popliteal vein for patency and competence. The exam should be ideally done in the standing position.	1A
Compression therapy is an effective method for the management of symptoms related to superficial disease, but it does not correct the source of reflux. When patients have a correctable source of reflux definitive treatment should also be offered unless it is contraindicated or unwanted.	1A
Named veins [Great Saphenous Vein, Small Saphenous Vein Anterior Accessory of the Great Saphenous Vein, Posterior Accessory of the Great Saphenous Vein, Intersaphenous Vein)] must have a reflux time > 500 msec, regardless of the reported vein diameter.	1A
Treatment of Named Saphenous Veins	
Endovenous thermal ablation (laser and radiofrequency) is the preferred treatment for saphenous and accessory saphenous (GSV, SSV, AAGSV, PAGSV) vein incompetence.	1B
Mechanical/chemical ablation (Clarivein Device) may also be used to treat truncal venous reflux.	2B
Open surgery is appropriate in veins not amenable to endovenous procedures but otherwise is not recommended because of increased pain, convalescent time, and morbidity.	1B
When open surgery of the great saphenous vein is performed, it should include high ligation and invagination stripping to the level of the knee.	2B

When open surgery of the small saphenous vein is performed, it includes high ligation and selective invagination of the proximal portion.	1B
Treatment of Circumflex Veins and Other Non-Truncal Veins	
Varicose (visible) symptomatic tributary veins can be treated by stab phlebectomy, liquid sclerotherapy or foam chemical ablation.	1B
Guidelines recommend (non-visible) symptomatic tributary veins be treated by ultrasound-guided liquid sclerotherapy or foam chemical ablation.	1B
Nonvisible symptomatic tributary veins be treated by ultrasound-guided liquid sclerotherapy or foam chemical ablation.	1B
Treatment of Perforator Veins	
Treatment of incompetent perforating veins located beneath a healed or open venous ulcer should have outward flow of 500 ms, with a diameter of 3.5 mm.	2B
In patients with perforator reflux as the primary or only source of disease, treatment of the perforator with endovenous thermal ablation, ligation or ultrasound guided sclerotherapy is suggested. Subsequent or simultaneous treatment of symptomatic varicosities arising from the incompetent perforator is also considered best practice.	2B

CEAP: Clinical, Etiology, Anatomy, Pathophysiology; GOR: Grade of Recommendation; GSV: Great Saphenous Vein; SSV: Small Saphenous Vein; AAGSV: Anterior Accessory of the Great Saphenous Vein; PAGSV: Posterior Accessory of great saphenous vein; mm: millimeter; ms: millisecond.

Grade of Recommendation:

1A: Strong recommendation, high-quality evidence.
1B: Strong recommendation, moderate quality evidence.
1C: Strong recommendation, low quality or very low-quality evidence.
2A: Weak recommendation, high quality evidence.
2B: Weak recommendation, moderate quality evidence.
2C: Weak recommendation, low quality or very low-quality evidence.

The treatment of other non-truncal, tributary varicose vein reflux (circumflex veins anterior and posterior thigh) is more complex. The medical record should reflect that these veins are incompetent and note their size, presence or absence of tortuosity, and depth relationship to the skin (i.e., accessible or not accessible by phlebectomy). (15)

Society for Vascular Surgery and the American Venous Forum

In 2011, the Society for Vascular Surgery and the American Venous Forum (16) published joint guidelines, which include the following recommendations in Table 2.

Table 2. Society for Vascular Surgery and the American Venous Forum Guidelines

Guideline Number	Guideline	GOR	Level of Evidence
Clinical Examination			
1.1	For clinical examination of the lower limbs for chronic venous disease, we recommend inspection (telangiectasia, varicosity, edema, skin discoloration, corona phlebectatica, lipodermatosclerosis, ulcer), palpation (cord, varicosity, tenderness, induration, reflux, pulses, thrill, groin or abdominal masses), auscultation (bruit), and examination of ankle mobility. Patients should be asked for symptoms of chronic venous disease, which may include tingling, aching, burning, pain, muscle cramps, swelling, sensations of throbbing or heaviness, itching skin, restless legs, leg tiredness, and fatigue.	1	A
Duplex Scanning			
2.1	We recommend that in patients with chronic venous disease, a complete history and detailed physical examination are complemented by duplex scanning of the deep and superficial veins. The test is safe, noninvasive, cost-effective, and reliable.	1	A
2.2	We recommend that the four components of a complete duplex scanning examination for chronic venous disease should be visualization, compressibility, venous flow, including measurement of duration of reflux, and augmentation.	1	A
2.3	We recommend that reflux to confirm valvular incompetence in the upright position of the patients be elicited in one of two ways: either with increased intra-abdominal pressure using a Valsalva maneuver to assess the common femoral vein and the saphenofemoral junction, or for the more distal veins, use of manual or cuff compression and release of the limb distal to the point of examination.	1	A
2.4	We recommend a cutoff value of 1 second for abnormally reversed flow (reflux) in the femoral and popliteal veins and of 500 ms for the great saphenous vein, the small saphenous vein, the tibial, deep femoral, and the perforating veins	1	B
2.5	We recommend that in patients with chronic venous insufficiency, duplex scanning of the perforating veins is	1	B

	performed selectively. We recommend that the definition of "pathologic" perforating veins includes those with an outward flow of duration of ≥500 ms, with a diameter of ≥3.5 mm and a location beneath healed or open venous ulcers (CEAP class C5-C6).		
Classification			
6.1	We recommend that the CEAP classification be used for patients with chronic venous disease. The basic CEAP classification is used for clinical practice, and the full CEAP classification system is used for clinical research.	1	A
6.2	We recommend that primary venous disorders, including simple varicose veins, be differentiated from secondary venous insufficiency and from congenital venous disorders because the three conditions differ in pathophysiology and management.	1	B
Outcome Assessment			
7.3	We recommend duplex scanning for follow-up of patients after venous procedures who have symptoms or recurrence of varicose veins.	1	B
Compression Therapy			
9.1	We suggest compression therapy using moderate pressure (20 to 30 mm Hg) for patients with symptomatic varicose veins.	2	C
9.2	We recommend against compression therapy as the primary treatment of symptomatic varicose veins in patients who are candidates for saphenous vein ablation.	1	B
9.3	We recommend compression as the primary therapeutic modality for healing venous ulcers.	1	B
9.4	We recommend compression as an adjuvant treatment to superficial vein ablation for the prevention of ulcer recurrence.	1	A
Open Venous Surgery			
10.1	For treatment of the incompetent great saphenous vein, we suggest high ligation and inversion stripping of the saphenous vein to the level of the knee.	2	B
10.2	To reduce hematoma formation, pain, and swelling, we recommend postoperative compression. The recommended period of compression in C2 patients is 1 week.	1	B
10.3	For treatment of small saphenous vein incompetence, we recommend high ligation of the vein at the knee	1	B

	crease, about 3 to 5 cm distal to the saphenopopliteal junction, with selective invagination stripping of the incompetent portion of the vein.		
10.4	To decrease recurrence of venous ulcers, we recommend ablation of the incompetent superficial veins in addition to compression therapy.	1	A
10.5	We suggest preservation of the saphenous vein using the ambulatory conservative hemodynamic treatment of varicose veins (CHIVA) technique only selectively in patients with varicose veins, when performed by trained venous interventionists.	2	B
10.6	We suggest preservation of the saphenous vein using the ambulatory selective varicose vein ablation under local anesthesia procedure only selectively in patients with varicose veins.	2	C
10.7	We recommend ambulatory phlebectomy for treatment of varicose veins, performed with saphenous vein ablation, either during the same procedure or at a later stage. If general anesthesia is required for phlebectomy, we suggest concomitant saphenous ablation.	1	B
10.8	We suggest transilluminated powered phlebectomy using lower oscillation speeds and extended tumescence as an alternative to traditional phlebectomy for extensive varicose veins.	2	C
10.9	For treatment of recurrent varicose veins, we suggest ligation of the saphenous stump, ambulatory phlebectomy, sclerotherapy, or endovenous thermal ablation, depending on the etiology, source, location, and extent of varicosity.	2	C
Endovenous Thermal Ablation			
11.1	Endovenous thermal ablations (laser and radiofrequency ablations) are safe and effective, and we recommend them for treatment of saphenous incompetence.	1	B
11.2	Because of reduced convalescence and less pain and morbidity, we recommend endovenous thermal ablation of the incompetent saphenous vein over open surgery.	1	B
Sclerotherapy of Varicose Veins			
12.1	We recommend liquid or foam sclerotherapy for telangiectasia, reticular veins, and varicose veins.	1	B
12.2	For treatment of the incompetent saphenous vein, we recommend endovenous thermal ablation over chemical ablation with foam.	1	B

Treatment of Perforating Veins			
13.1	We recommend against selective treatment of incompetent perforating veins in patients with simple varicose veins (CEAP class C2).	1	B
13.2	We suggest treatment of "pathologic" perforating veins that includes those with an outward flow duration of ≥500 ms, with a diameter of ≥3.5 mm, located beneath a healed or open venous ulcer (CEAP class C5-C6).	2	B
13.3	For treatment of "pathologic" perforating veins, we suggest subfascial endoscopic perforating vein surgery, ultrasonographically guided sclerotherapy, or thermal ablations.	2	C

CEAP: Clinical, Etiology, Anatomy, Pathophysiology; GOR: Grade of recommendation: 1: Strong; 2: weak.
Level of Evidence: A: High quality; B: Moderate quality; C: Low or very low quality.

American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology

In 2020, the American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology (17) published guidelines for chronic lower extremity venous disease which include the following recommendations when:

- Diagnostic information is accurate.
- Ablation refers to treatment by thermal, chemical, or mechanical techniques.
- For each scenario, aside from the stated disease described, the remaining venous system is normal.
- The vein in question is continuous (i.e., "GSV axial reflux above and below the knee" refers to reflux occurring along a continuous vessel).
- The existing published literature regarding vein ablation is accurate.
- The patient in question has no contraindication to the proposed intervention.
- There are no patient-generated mitigating factors, such as noncompliance or do not resuscitate (DNR) status.
- The physician performing the intervention possesses adequate skill to perform the procedure.
- It is not a recurrent vein (i.e., recurrent GSV unless otherwise specified).
- The indication for treatment is not cosmetic.
- All scenarios refer to chronic venous disease (not acute deep vein thrombus).
- Deep system is normal except for iliac and inferior vena cava scenarios, in which case disease is isolated to the iliac or caval system.
- All scenarios refer to primary venous insufficiency except for iliac and IVC cases, which may be primary (nonthrombotic iliac vein lesions) or secondary due to post-thrombotic disease.

- The section on nontruncal varicose veins or telangiectasia refers to treatment of isolated indexed veins in the presence of concomitant superficial reflux, unspecified.
- CEAP C3 refers to edema due to venous disease.

In addition, the guidelines define cosmetic as a request in which the individual is concerned about the appearance or has explicitly requested a cosmetic (non-therapeutic) procedure in the setting of no symptoms and minimal (CEAP 0-2) signs.

Table 3. American Venous Forum, the Society for Vascular Surgery, the American Vein and Lymphatic Society, and the Society of Interventional Radiology Guidelines

Number	Procedure	Appropriate Category
Appropriateness criteria for saphenous vein ablation		
1.1	Ablation of the GSV in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6), when the GSV demonstrates axial reflux with or without SFJ reflux	Appropriate
1.2	Ablation of the below-knee GSV in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6), when there is segmental GSV reflux below the knee directed to the affected area	Appropriate
1.3	Ablation of the below-knee GSV in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema	May be appropriate
1.4	Ablation of the SSV in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6), when the SSV demonstrates reflux directed to affected area	Appropriate
1.5	Ablation of the SSV with reflux that communicates with the GSV or thigh veins by intersaphenous vein, in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6), when the SSV demonstrates reflux directed to affected area	Appropriate
1.6	Ablation of the AAGSV in a symptomatic patient with varicose veins, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2, 4-6), when the AAGSV demonstrates axial reflux directed to affected area	Appropriate
1.7	Ablation of the AAGSV in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema	May be appropriate

1.8	Ablation of the AAGSV with no reflux, but GSV with reflux (CEAP classes 2-6)	Rarely appropriate
1.9	Therapeutic ablation for asymptomatic disease and visible veins (CEAP classes 1-2)[a]	Rarely appropriate
2.0	Ablation for a vein with no reflux	Never appropriate
Appropriateness criteria for treatment of nontruncal varicose veins with or without telangiectasia		
3.1	Treatment of nontruncal varicose veins with or without telangiectasia by sclerotherapy, ambulatory phlebectomy, or powered phlebectomy in a symptomatic patient with varicose veins, edema due to venous disease, skin or subcutaneous changes, healed or active ulcers (CEAP classes 2-6)	Appropriate
Appropriateness criteria for management decisions for diseased tributaries associated with saphenous ablation		
4.1	Providing care for the diseased tributaries of an ablated saphenous vein either concomitantly or as a staged procedure	Appropriate
4.2	Referral of patient to another health care provider for care of diseased tributaries of an ablated vein	May be appropriate
4.3	Making no provisions for care of diseased tributaries	Rarely appropriate
Appropriateness criteria for perforator veins		
5.1	Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with skin or subcutaneous changes, healed or active ulcers (CEAP classes 4-6)	Appropriate
5.2	Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with edema due to venous disease (CEAP class 3), provided careful clinical judgment is exercised because of the potential for a wide range of coexisting nonvenous causes of edema	May be appropriate
5.3	Perforator vein treatment of veins with high outward flow and large diameter directed toward affected area in a symptomatic patient with telangiectasia or varicose veins (CEAP classes 1-2)	Rarely appropriate
5.4	Perforator vein treatment in an asymptomatic patient with visible telangiectasia or varicose veins (CEAP classes 1-2)	Never appropriate
Appropriateness criteria for duplex ultrasound for chronic venous disease		
7.1	Duplex ultrasound scanning for chronic venous disease in the upright position if technically feasible and safe, eliciting reflux by distal compression and release, and documenting duration of reflux	Appropriate

7.2	Examining the patient in the steep reverse Trendelenburg position, particularly if testing in the standing position is not technically feasible or safe	May be appropriate
7.3	Eliciting reflux using the Valsalva maneuver, particularly for interrogation of the common femoral vein or saphenofemoral junction	May be appropriate
7.4	The technique of creating nonphysiologic "flash" reflux with proximal compression during duplex ultrasound scanning.	Rarely appropriate

AAGSV: Anterior accessory great saphenous vein; CEAP: Clinical, Etiology, Anatomy, and Pathophysiology; GSV: great saphenous vein; SFJ: saphenofemoral junction; SSV: small saphenous vein.

[a] Excludes cosmetic indications and cannot be extrapolated to such indications.

Appropriateness Rating Scale

- Appropriate –
  - Treatment is a generally acceptable and reasonable approach for the indication; and
  - Treatment is likely to improve the patient's health outcomes or survival.
- May be appropriate –
  - Treatment may be an acceptable or reasonable approach for the indication; or
  - Treatment may improve the patient's health outcomes or survival; or
  - More research or patient information is necessary to classify the appropriateness of the indication.
- Rarely appropriate
  - Treatment is not a generally acceptable or reasonable approach for the indication; and
  - Treatment lacks clear benefit/risk advantage; and
  - Treatment is rarely effective for the indication.
- Never appropriate

Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society

Part 1

In 2022, the Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society (18) published Part 1 of the guidance for the management of varicose veins of the lower extremities.

Section 1.3.3 states a complete duplex ultrasound scanning examination for venous reflux in the lower extremities should include diameter measurements in patients with the leg in the dependent position, from the anterior to the posterior wall, at the saphenofemoral junction, in the great saphenous vein at the proximal thigh and at the knee, in the anterior accessory great saphenous vein, and in the small saphenous vein at the saphenopopliteal junction or proximal calf. Images of both normal and abnormal findings should be documented in the records of the patient.

In section 2.4.1, sclerotherapy is not recommended as a first-line therapy for patients with symptomatic varicose veins and axial reflux in the great saphenous vein or small saphenous vein. Instead, endovenous thermal ablation or high ligation and stripping is recommended over physician-compounded ultrasound guided foam sclerotherapy (UGFS) when long-term outcomes are important. However, the strength of this recommendation is weak (Grade 2), and the quality of evidence is C (low to very low).

Section 5 provides recommendations for the concomitant or staged treatment of varicose tributaries in patients undergoing ablation of incompetent superficial truncal veins such as the GSV or SSV, using phlebectomy or liquid or foam sclerotherapy. In this context, foam sclerotherapy includes either physician-compounded foam or commercially prepared polidocanol endovenous microfoam.

According to section 2 and 5, sclerotherapy alone is not recommended for the treatment of incompetent GSV or SSV. However, when treating superficial truncal veins, sclerotherapy is recommended in a limited manner—either concomitantly or in a staged fashion—for treating tributary veins. Notably, concomitant sclerotherapy carries a strong recommendation (Grade 1) despite the low quality of evidence (C). On the other hand, staged sclerotherapy is given a weak recommendation (Grade 2) with low-quality evidence (C) and is only advised when there are anatomical or medical reasons to do so. If ablation is initially performed alone, a follow-up period of more than 3 months is required to assess whether additional staged phlebectomy or ultrasound guided sclerotherapy is needed for persistent or recurrent symptoms. However, the recommendation for this clinical practice is ungraded.

Part 2

In 2023, the Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society (19) published part II of the guidelines which include the following recommendations and consensus statements as noted on Table 4. Part II addresses the treatment of varicose tributaries and recurrent varicosities.

When symptoms are present, sclerotherapy is recommended for the treatment of varicose tributaries, reticular veins, and telangiectasias. Although it is not recommended as the initial treatment for incompetent GSV or SSV, sclerotherapy is also recommended for these superficial truncal veins if recurrence occurs after prior treatment. The guideline notes that there are no clinical studies comparing the effectiveness of different foam sclerotherapy techniques—such as room air, a CO_2 gas mixture, physician-compounded foam, or commercially prepared polidocanol endovenous microfoam. This indicates a need for further research in this area.

Additionally, sclerotherapy is described as a useful intervention prior to surgical treatment in cases involving acute bleeding, particularly when combined with leg elevation and direct compression.

Per the guidelines, isolated compressive sclerotherapy is not recommended for treating large, extensive, or truncal varicosities due to higher rates of recanalization and recurrence. For these conditions, current guidelines recommend initial treatment with endovenous thermal ablation using radiofrequency or laser, or surgery. Ultrasound-guided foam sclerotherapy may be used as an alternative or supplementary treatment.

Refer to Table 4 for applicable recommendations for the management of varicose veins of the lower extremities.

Table 4. Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society clinical practice guidelines for the management of varicose veins of the lower extremities (Part II)

Evaluation of patients with varicose veins			
Classification and grading of clinical severity of chronic venous disorders			
Good Practice Statements			
1.1.1.	We recommend the use of the 2020 updated clinical stage, etiology, anatomy, pathology classification system for chronic venous disorders. The clinical or basic CEAP classification can be used for clinical practice and the full CEAP classification system should be used for clinical research.		
Doppler ultrasound scanning			
Guidelines		**Grade of Recommendation**	**QOE**
1.2.1.	For patients with chronic venous disease of the lower extremities, we recommend DUS as the diagnostic test of choice to evaluate for venous reflux.	1 (strong)	B (moderate)
1.3.1.	Reflux is defined as a minimum value >500 ms of reversed flow in the superficial truncal veins (great saphenous vein, small saphenous vein, anterior accessory great saphenous vein, and posterior accessory great saphenous vein) and in the tibial, deep femoral, and perforating veins. A minimum value of >1 second of reversed flow is diagnostic of reflux in the common femoral, femoral, and popliteal veins. There is no minimum diameter required to have pathologic reflux.		
1.3.2.	Axial reflux of the GSV is defined as uninterrupted retrograde venous flow from the groin to the upper calf. Axial reflux in the SSV is defined as being from the knee to the ankle. Axial reflux in the AAGSV and PAGSV is retrograde flow between two measurements, at least 5 cm apart. Retrograde flow can occur in the superficial or deep veins, with or without		

	perforating veins. Junctional reflux is limited to the saphenofemoral or saphenopopliteal junction. Segmental reflux occurs in only a portion of a superficial or deep truncal vein.
1.3.3.	A definition of "pathologic" perforating veins in patients with varicose veins clinical class C2 includes those with an outward flow duration of >500 ms and a diameter of >3.5 mm on DUS.
Good Practice Statements	
1.4.1.	We recommend evaluation of reflux with DUS be performed in an Intersocietal Accreditation Commission or American College of Radiology accredited vascular laboratory by a credentialed ultrasonographer, with the patient standing whenever possible. A sitting or reverse Trendelenburg position can be used if the patient cannot stand.
1.4.2.	We recommend that for evaluation of reflux with DUS, the sonographer use either a Valsalva maneuver or augmentation to assess the common femoral vein and SFJ and distal augmentation with either manual compression or cuff deflation for evaluation of more distal segments. Superficial reflux must be traced to its source, including the saphenous junctions, truncal or perforating veins, or pelvic origin varicose veins. The study should be interpreted by a physician trained in venous DUS interpretation.
1.4.3.	We recommend that a complete DUS examination for venous reflux in the lower extremities include transverse gray scale images without and with transducer compression of the common femoral, proximal, mid, and distal femoral and popliteal veins, SFJ, and at least two segments along the GSV and SSV.
1.4.4.	We recommend that a complete DUS examination for venous reflux in the lower extremities include measurement of the spectral Doppler waveform using calipers. Reflux at baseline and in response to a Valsalva maneuver or distal augmentation in the common femoral vein and at the SFJ and in response to distal augmentation in the midfemoral and popliteal vein should be documented. Reflux in the GSV at the proximal thigh and knee, in the AAGSV or PAGSV at the SFJ and at the proximal thigh and in the SSV at SPJ and at the proximal calf should be documented.
1.4.5.	We recommend that a complete DUS examination for venous reflux in the lower extremities include diameter measurements in patients with the leg in the dependent position, from the anterior to the posterior wall, in the GSV 1 cm distal to the SFJ, at the proximal thigh and at the knee, in the AAGSV and PAGSV in the proximal thigh, and in the SSV at the SPJ and the proximal calf. Images of both normal and abnormal findings should be documented in the records of the patient.
Consensus statements	
1.5.1.	In asymptomatic patients with telangiectasias or reticular veins (CEAP Class C1) DUS evaluation of the lower extremity veins should not be routinely

	performed, since testing could result in unnecessary saphenous vein ablation procedures.		
1.5.2.	In symptomatic CEAP Class C1 patients with bleeding or with severe symptoms of pain or burning due to moderate to severe telangiectasias or reticular veins, DUS evaluation may be performed to exclude associated venous incompetence; however, saphenous ablation for C1 disease without bleeding is rarely required.		
1.5.3.	In symptomatic patients with varicose veins (CEAP Class C2) the deep venous system should be routinely evaluated for infrainguinal obstruction or valvular incompetence.		
1.5.4.	In symptomatic patients with varicose veins (CEAP Class C2) evaluation for iliofemoral venous obstruction with DUS or with other imaging studies should be performed if suprapubic or abdominal wall varicosities are present and in patients with symptoms of proximal obstruction, including thigh and leg fullness, heaviness, swelling and venous claudication. CEAP Classes 3-6 warrant DUS or other imaging studies to evaluate for iliofemoral obstruction.		
1.5.5.	In patients with medial thigh or vulvar varicosities, evaluation of pelvic venous pathology with DUS or other imaging studies is not indicated if they have no symptoms of pelvic venous disease.		
Compression therapy			
Compression therapy vs. intervention			
Guidelines		**Grade of Recommendation**	**QOE**
2.1.1.	For patients with symptomatic varicose veins and axial reflux in the superficial truncal veins, we suggest compression therapy for primary treatment if the patient's ambulatory status and/or underlying medical conditions warrant a conservative approach, or if the patient prefers conservative treatment for either a trial period or definitive management.	2 (weak)	C (low to very low)
2.1.2.	For patients with symptomatic varicose veins and axial reflux in the GSV or SSV who are candidates for intervention, we recommend superficial venous intervention over long term compression stockings.	1 (strong)	B (moderate)
2.1.3.	For patients with symptomatic varicose veins and axial reflux in the AAGSV or PAGSV, who are candidates for	2 (weak)	C (low to very low)

	intervention, we suggest superficial venous intervention over long-term compression stockings.		
2.1.4.	In patients with symptomatic varicose veins who are candidates for endovenous therapy and wish to proceed with treatment, we suggest against a 3-month trial of compression therapy before intervention.	2 (weak)	B (moderate)
Compression therapy after intervention			
2.2.1.	In patients undergoing thermal ablation for saphenous incompetence, with or without concomitant phlebectomy, we suggest postprocedure compression therapy for a minimum of 1 week for pain reduction.	2 (weak)	B (moderate)
Endovenous ablation vs high ligation and stripping (HL & S)			
4.1.1.	For patients with symptomatic varicose veins and axial reflux in the GSV, who are candidates for intervention, we recommend treatment with endovenous ablation over HL&S of the GSV.	1 (strong)	B (moderate)
4.1.2.	For patients with symptomatic varicose veins and axial reflux in the SSV, who are candidates for intervention, we recommend treatment with endovenous ablation over ligation and stripping of the SSV.	1 (strong)	C (low to very low)
4.1.3.	For patients with symptomatic varicose veins and axial reflux in the AAGSV or PAGSV, who are candidates for intervention, we suggest treatment with endovenous ablation, with additional phlebectomy, if needed, over ligation and stripping of the accessory vein.	2 (weak)	C (low to very low)
4.1.4.	For patients with symptomatic varicose veins and axial reflux in the GSV or SSV, we recommend treatment with HL&S of the saphenous vein if technology or expertise in endovenous ablation is not available or if the venous anatomy precludes endovenous treatment.	1 (strong)	B (moderate)

4.1.5.	For patients with symptomatic varicose veins and axial reflux in the AAGSV or PAGSV, we suggest treatment with ligation and stripping of the accessory saphenous vein, with additional phlebectomy, if needed, if technology or expertise in endovenous ablations is not available or if the venous anatomy precludes endovenous treatment.	2 (weak)	C (low to very low)
4.1.6.	For patients with symptomatic varicose veins and axial reflux in the GSV who place a high priority on the long-term outcomes of treatment (QOL and recurrence), we suggest treatment with endovenous laser ablation, radiofrequency ablation, or HL&S over physician-compounded ultrasound-guided foam sclerotherapy, because of long-term improvement of QOL and reduced recurrence.	2 (weak)	B (moderate)
4.1.7.	For patients with symptomatic varicose veins and axial reflux in the SSV, we suggest treatment with EVLA, RFA, or ligation and stripping from the knee to the upper or midcalf over physician-compounded UGFS because of long-term improvement of QOL and reduced recurrence.	2 (weak)	C (low to very low)
4.1.8.	For patients with symptomatic varicose veins and axial reflux in the AAGSV or PAGSV who place a high priority on the long-term outcomes of treatment (QOL and recurrence), we suggest treatment of the refluxing superficial trunk with endovenous laser ablation, RFA, or HL&S, with additional phlebectomy, if needed, over physician-compounded UGFS because of long-term improvement of QOL and reduced recurrence.	2 (weak)	C (low to very low)
Thermal vs nonthermal ablation of superficial truncal veins			
Guidelines		**Grade of Recommendation**	**QOE**

4.2.1.	For patients with symptomatic axial reflux of the GSV, we recommend either thermal or nonthermal ablation from the groin to below the knee, depending on the available expertise of the treating physician and the preference of the patient.	1 (strong)	B (moderate)
4.2.2.	For patients with symptomatic axial reflux of the SSV, we recommend either thermal or nonthermal ablation from the knee to the upper or midcalf, depending on the available expertise of the treating physician and the preference of the patient.	1 (strong)	C (low to very low)
4.2.3.	For patients with symptomatic axial reflux of the AAGSV or PAGSV, we suggest either thermal or nonthermal ablation, with additional phlebectomy, if needed, depending on the available expertise of the treating physician and the preference of the patient.	2 (weak)	C (low to very low)
Factors affecting choice of superficial truncal ablation and outcome			
Guidelines		**Grade of Recommendation**	**QOE**
5.1.1.	In symptomatic patients with C2 disease we suggest against using truncal vein diameter to determine which patients need venous ablation.	2 (weak)	B (moderate)
Consensus statements			
5.2.1.	In asymptomatic patients with C2 disease, prophylactic intervention does not prevent progression of venous disease. Weight control, compression stockings, and avoiding prolonged standing may be beneficial.		
5.2.2.	Interventions to treat varicose veins can be performed in an office-based setting, surgery center, or hospital operating room, at the discretion of the physician, who is specialized in vein care. Better patient experience and lower cost was reported for procedures performed in an office-based setting.		
5.2.3.	In patients with symptomatic C2 disease, isolated SFJ incompetence does not justify ablation of an otherwise competent GSV.		
5.2.4.	In patients with symptomatic C2 disease, ablation of the incompetent GSV may be indicated, even if the axial reflux is not complete and the SFJ is competent. Ablation of isolated refluxing GSV segments, in the presence of		

	competent segments proximally and distally, is rarely indicated. Shared decision-making with the patient is warranted.		
Factors affecting choice of superficial truncal ablation and outcome			
5.2.5.	In patients with reflux in the below-knee GSV, ablation to the lowest point of reflux resulted in better early outcome. Nonthermal techniques are better for ablation of refluxing distal calf saphenous veins, to avoid thermal nerve injury.		
5.2.6.	In patients with an epifascial or superficial saphenous vein, thermal ablation may result in skin burns, hyperpigmentation, or induration, while nonthermal techniques may cause hyperpigmentation or induration. Miniphlebectomy or limited stripping is safe and effective if the saphenous vein is close to the skin (10 mm), nonaneurysmal saphenous veins, thermal ablation with EVLA or RFA should be performed rather than using nonthermal ablation techniques.		
5.2.8.	The incidence of superficial thrombophlebitis has been reported to be similar for thermal and nonthermal ablations.		
5.2.9.	In patients with uncomplicated C2 disease (no venous claudication, thigh swelling, suprapubic or abdominal wall varicosities) due to concurrent superficial incompetence and iliac or iliofemoral venous obstruction, treatment of superficial incompetence first is indicated.		
Interventions to preserve the GSV			
6.1.1.	For patients with the early stages of symptomatic varicose veins we suggest preserving the GSV using the ambulatory selective variceal ablation under local anesthesia technique, if performed by a physician who is familiar with the strategy.	2 (weak)	B (moderate)
6.1.2.	For patients with symptomatic varicose veins, we suggest preserving the GSV using the ambulatory conservative hemodynamic correction of venous insufficiency (CHIVA) technique, if performed by physician who is familiar with the strategy.	2 (weak)	B (moderate)
Treatment of venous tributaries			
Telangiectasias and reticular veins			
Guidelines		**Grade of Recommendation**	**QOE**
7.1.1.	For patients with symptomatic telangiectasias and reticular veins, we	1 (strong)	B (moderate)

	recommend sclerotherapy with liquid or foam.		
7.1.2	For patients with symptomatic telangiectasias or reticular veins, we suggest transcutaneous laser treatment if the patient has sclerosant allergy, needle phobia, sclerotherapy, failure or small veins (<1 mm) with telangiectatic matting.	2 (weak)	B (moderate)
Varicose tributaries			
Guidelines		**Grade of Recommendation**	**QOE**
7.2.1.	For treatment of symptomatic varicose tributaries, we recommend miniphlebectomy or ultrasound guided sclerotherapy using physician-compounded foam or polidocanol endovenous microfoam.	1 (strong)	B (moderate)
7.2.2.	For treatment of symptomatic varicose tributaries, we suggest transilluminated powered phlebectomy as an alternative treatment for patients with clusters of varicosities by a physician who is trained in the procedure.	2 (weak)	C (low to very low)
Consensus statements			
7.2.3.	For patients with symptomatic varicose tributaries, treatment of the tributaries should be performed, even if the superficial trunks are competent.		
7.2.4.	There is no clinical evidence that foam sclerotherapy using room air is less safe and effective than using CO_2 gas mixture.		
7.2.5.	There is currently no clinical study of sclerotherapy with PCF, prepared using the Tessari method, that shows that it is less safe or effective than PEM.		
Treatment of varicose tributaries concomitant or staged with superficial truncal ablation			
Guidelines		**Grade of Recommendation**	**QOE**
8.1.1.	For patients with symptomatic reflux in the GSV or SSV and associated varicosities, we recommend ablation of the refluxing venous trunk and concomitant phlebectomy or ultrasound-guided FS of the varicosities with PCF or PEM.	1 (strong)	C (low to very low)

8.1.2.	For patients with symptomatic reflux in the AAGSV or PAGSV, we suggest simultaneous ablation of the refluxing venous trunk and phlebectomy or UGFS of the varicosities with PCF or PEM.	2 (weak)	C (low to very low)
Treatment of varicose tributaries concomitant or staged with superficial truncal ablation			
8.1.3.	For patients with symptomatic reflux in the GSV or SSV, we suggest ablation of the refluxing venous trunk and staged phlebectomy or UGFS of the varicosities only if anatomical or medical reasons are present. We suggest shared decision-making with the patient regarding the timing of the procedure.	2 (weak)	C (low to very low)
8.1.4.	For patients with symptomatic reflux in the AAGSV or PAGSV, we suggest ablation of the refluxing venous trunk and staged phlebectomy or UGFS of the varicosities only if anatomical or medical reasons present. We suggest shared decision-making with the patient regarding the timing of the procedure.	2 (weak)	C (low to very low)
Good clinical practice statement			
8.2.	For patients with symptomatic reflux in the major superficial venous trunks and associated varicosities undergoing initial ablation alone, we recommend follow-up for >3 months to assess the need for staged phlebectomy or ultrasound- guided sclerotherapy for persistent or recurrent symptoms. Longer follow-up is recommended for those with recurrence or more advanced CEAP class.		
Management of recurrent varicosities			
Consensus statements			
9.1.1.	For patients with symptomatic recurrent varicosities, clinical evaluation and DUS should be performed before treatment to determine the potential source of recurrence.		
9.1.2.	For patients with symptomatic recurrent varicosities due to persistent or recurrent reflux of the GSV or AAGSV, treatment either with open surgical or endovascular techniques may be performed, with good outcomes expected.		
9.1.3.	For patients with symptomatic recurrent varicosities due to persistent or recurrent reflux at the groin, either EVLA or RFA can be used if there is a straight GSV stump, long enough for thermal ablation. Sclerotherapy or		

	phlebectomy should be performed for recurrence due to neovascularization.		
9.1.4.	For patients with symptomatic recurrent varicosities due to persistent or recurrent reflux of the SSV, UGFS should be performed.		
9.1.5.	For patients with residual or recurrent varicosities due to incompetent perforator veins, treatment with both open and endovascular techniques may be used depending on the physician's experience, patient choice and availability of technology.		
Ablation of incompetent perforating veins			
Guidelines		**Grade of Recommendation**	**QOE**
10.1.1.	For patients with varicose veins (CEAP class C2) who have significant, symptomatic axial reflux of the GSV or SSV, we recommend against treatment of incompetent perforating veins concomitant with initial ablation of the saphenous veins.	1 (strong)	C (low to very low)
10.1.2.	For patients with varicose veins who have significant, symptomatic axial reflux of the AAGSV or PAGSV, we suggest against treatment of incompetent perforating veins concomitant with initial ablation of the superficial truncal veins.	2 (weak)	C (low to very low)
Consensus statement			
10.2.	For patients with incompetent pathologic perforators associated with symptomatic residual, recurrent, and rarely primary varicosities, without associated saphenous incompetence, either open or endovascular techniques can be used to treat the perforator veins.		
Management of bleeding varicose veins			
Consensus statement			
13.1.	For patients presenting with acute bleeding from varicose veins, leg elevation, direct compression, and sclerotherapy should be attempted before suture ligation to control bleeding.		
13.2.	For patients with bleeding due to varicose veins, prompt referral to a venous specialist should be done.		
13.3.	For patients who presented with bleeding from varicose veins, after the bleeding has been controlled, evaluation for superficial venous incompetence and appropriate intervention on the responsible veins should be done to control venous hypertension and reduce the risk of recurrent hemorrhage.		

13.4.	Patients with varicose veins or venous ulcerations should be counseled on the possibility of venous bleeding and their families, caregivers, or friends educated regarding leg elevation and simple compression techniques to control severe bleeding.
Management of superficial vein aneurysms	
Consensus statements	
14.1.	For patients with superficial truncal vein aneurysm, located within 3 cm of the SFJ or SPJ, open surgical excision, with high proximal and distal ligations should be performed. If symptomatic saphenous reflux is present, endovenous or open surgical ablation (phlebectomy or limited stripping) of the distal saphenous vein should be performed.
14.2.	For patients with an asymptomatic superficial truncal vein aneurysm, located >3 cm distal to the SFJ, endovenous ablation alone should be performed. Thromboprophylaxis in these patients reduces the risk of VTE.
14.3.	Patients with symptomatic, thrombosed or large (>3 cm) aneurysms in the superficial veins are best treated with surgical excision.

AAGSV: anterior accessory great saphenous vein; cm: centimeter; CEAP: clinical stage, etiology, anatomy, pathology; DUS: doppler ultrasound; EVLA: endovenous laser ablation; GSV: great saphenous vein; ms: milliseconds; PAGSV: posterior accessory great saphenous vein; PCF: physician-compounded foam; PEM: polidocanol endovenous microfoam; RFA: radiofrequency ablation; SFJ: saphenofemoral junction; SPJ: saphenopopliteal junction; SSV: small saphenous vein; QOE: quality of evidence; QOL: quality of life; UGFS: ultrasound-guided foam sclerotherapy; VTE: venous thromboembolism.

The 2023 Society for Vascular Surgery, American Venous Forum, and American Vein and Lymphatic Society clinical practice guidelines recommend the use of the 2020 CEAP classification system, in which varicose veins are defined as dilated subcutaneous tributaries 3 mm or greater in diameter. Reticular veins (less than 3 mm in diameter) and telangiectasias (less than 1 mm in size) fall within CEAP Class C1, for which routine intervention is generally considered cosmetic. On clinical exam, photographs may be added to the patient's file for comparison, in particular for skin changes. (19)

European Society for Vascular Surgery

In 2022, the European Society for Vascular Surgery published guidance for the management of chronic venous disease of the lower limbs. (3) The ESVS states in section 1.4.1. that symptoms of chronic venous disease are extremely variable and can negatively affect the quality of life in patients. Symptoms increase with age and are more commonly reported in women. Patients may present with heaviness, tired legs, edema, itching of the skin, nocturnal cramps, throbbing, burning pain, aching of the legs, which is exacerbated by prolonged standing or sitting, or venous claudication during exercise. Symptoms of heaviness, sensation of swelling, burning, itching, and pain/aching are associated with a higher CEAP clinical class both in intensity and the number of symptoms. Symptoms such as fatigue, cramps, and restless legs are less specific for chronic venous disease. Counselling and adequate support are important, including lifestyle modifications (such as frequent walks, using insoles, avoiding prolonged standing, resting with the legs slightly elevated, avoiding heat exposure), and weight loss for obesity, which is increasingly recognized as one of the most important contributors to the development of CVD.

The ESVS offers the following guidance:

- Recommendation 8: For patients with symptomatic chronic venous disease, exercise should be considered to reduce venous symptoms (Class IIA- Weight of evidence/opinion is in favor of usefulness/ efficacy, Level B evidence- Data derived from a single randomised clinical trial or large non-randomised studies)
- Recommendation 30: For patients with GSV incompetence requiring treatment, cyanoacrylate adhesive closure (CAC) should be considered when a non-thermal non-tumescent technique is preferred. (Class IIA- weight of evidence/opinion is in favor of usefulness/efficacy, Level of evidence A- data from multiple RCTs or meta-analyses)

The ESVS considers cryolaser and cryosclerotherapy as new treatment options (hybrid techniques per section 4.5.3) for telangiectasias, reticular and feeder veins, although more studies are required for its validation.

National Institute for Health and Care Excellence

In 2013, NICE updated its guidance on ultrasound-guided foam sclerotherapy for varicose veins. (20) NICE stated that:

- "1.1 Current evidence on the efficacy of ultrasound-guided foam sclerotherapy for varicose veins is adequate. The evidence on safety is adequate, and provided that patients are warned of the small but significant risks of foam embolization (see section 1.2), this procedure may be used with normal arrangements for clinical governance, consent and audit.
- 1.2 During the consent process, clinicians should inform patients that there are reports of temporary chest tightness, dry cough, headaches and visual disturbance, and rare but significant complications including myocardial infarction, seizures, transient ischaemic attacks and stroke."

In 2020, NICE published guidance on the use of cyanoacrylate glue occlusion for varicose veins which states that current evidence supports the safety and efficacy of this procedure given that standard arrangements are in place for clinical governance, consent and audit. This procedure should only be performed by clinicians with appropriate training in this procedure and experienced in the use of venous ultrasound. (21)

In 2016, NICE revised its guidance on endovenous mechanochemical ablation, (22) concluding that "Current evidence on the safety and efficacy of endovenous mechanochemical ablation for varicose veins appears adequate to support the use of this procedure, provided that standard arrangements are in place for consent, audit and clinical governance. Clinicians are encouraged to collect longer-term follow-up data."

Coding

Procedure codes on Medical Policy documents are included **only** as a general reference tool for each policy. **They may not be all-inclusive.**

The presence or absence of procedure, service, supply, or device codes in a Medical Policy document has no relevance for determination of benefit coverage for members or reimbursement for providers. **Only the written coverage position in a Medical Policy should be used for such determinations.**

Benefit coverage determinations based on written Medical Policy coverage positions must include review of the member's benefit contract or Summary Plan Description (SPD) for defined coverage vs. non-coverage, benefit exclusions, and benefit limitations such as dollar or duration caps.

CPT Codes	36465, 36466, 36468, 36470, 36471, 36473, 36474, 36475, 36476, 36478, 36479, 36482, 36483, 37500, 37700, 37718, 37722, 37735, 37760, 37761, 37765, 37766, 37780, 37785, 37799, 76942
HCPCS Codes	S2202

*Current Procedural Terminology (CPT®) ©2025 American Medical Association: Chicago, IL.

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Centers for Medicare & Medicaid Services

The information contained in this section is for informational purposes only. HCSC makes no representation as to the accuracy of this information. It is not to be used for claims adjudication for HCSC Plans.

The Centers for Medicare & Medicaid Services does not have a national Medicare coverage position. Coverage may be subject to local carrier discretion.

A national coverage position for Medicare may have been developed since this medical policy document was written. See Medicare's National Coverage at cms.hhs.gov.

Policy History/Revision

Date	Description of Change
TBD	New medical document. Surgical treatment of varicose veins may be considered medically necessary for individuals with symptoms of varicose vein insufficiency as noted in Coverage, and when the individual meets all the criteria outlined for phlebectomy or sclerotherapy as noted in Coverage. Sclerotherapy is considered cosmetic for ANY of the following: Superficial veins <1 mm in diameter; Varicosities or reticular veins between 1 and <3 mm in diameter; To improve the appearance of a non-symptomatic leg. Compressive isolated sclerotherapy for large, extensive or truncal varicosities is considered not medically necessary without ligation of the greater saphenous vein at the saphenofemoral

	junction, or the lesser saphenous vein at the saphenopopliteal junction. Sclerotherapy of isolated tributary and/or perforator veins without prior or concurrent treatment of saphenous veins is considered experimental, investigational and/or unproven when the above criteria are not met. The following techniques for the treatment of varicose veins are considered experimental, investigational and/or unproven: Mechanochemical ablation (e.g., ClariVein®); Endovenous cryoablation (cryolaser/cryosclerotherapy). Surgical treatment of veins with clinical findings consistent with CEAP Class 1 (e.g., spider veins and telangiectasia) by ANY method is considered cosmetic.