Medical Policy
Treatment of Varicose Veins/Venous Insufficiency

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• Coding Information
• Information Pertaining to All Policies
• Policy: Medicare
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• Authorization Information
• Policy History

Policy Number: 238
BCBSA Reference Number: 7.01.124
NCD/LCD: Local Coverage Determination (LCD): Varicose Veins of the Lower Extremity, Treatment of (L33575)

Related Policies
None

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity

SAPHENOUS VEINS

Great or Small Saphenous Veins
Treatment of the greater or lesser saphenous veins by surgery (ligation and stripping) or endovenous radiofrequency or laser ablation, or microfoam sclerotherapy may be considered MEDICALLY NECESSARY for symptomatic varicose veins/venous insufficiency when the following criteria have been met:

There is demonstrated saphenous reflux and CEAP [Clinical, Etiology, Anatomy, Pathophysiology]
• class C2 or greater, AND
• There is documentation of one or more of the following indications:
  o Ulceration secondary to venous stasis; OR
  o Recurrent superficial thrombophlebitis; OR
  o Hemorrhage or recurrent bleeding episodes from a ruptured superficial varicosity; OR
  o Persistent pain, swelling, itching, burning, or other symptoms are associated with saphenous reflux, AND the symptoms significantly interfere with activities of daily living, AND conservative management including compression therapy for at least 3 months has not improved the symptoms.

Treatment of great or small saphenous veins by surgery, endovenous radiofrequency or laser ablation, or microfoam sclerotherapy that do not meet the criteria described above is considered cosmetic and NOT MEDICALLY NECESSARY.
ACCESSORY SAPHENOUS VEINS
Treatment of accessory saphenous veins by surgery (ligation and stripping) or endovenous radiofrequency or laser ablation, or microfoam sclerotherapy may be considered MEDICALLY NECESSARY for symptomatic varicose veins/venous insufficiency when the following criteria have been met:

- Incompetence of the accessory saphenous vein is isolated, OR the great or small saphenous veins had been previously eliminated (at least 3 months); AND
- There is demonstrated accessory saphenous reflux; AND
- There is documentation of one or more of the following indications:
  - Ulceration secondary to venous stasis; OR
  - Recurrent superficial thrombophlebitis; OR
  - Hemorrhage or recurrent bleeding episodes from a ruptured superficial varicosity, OR
  - Persistent pain, swelling, itching, burning, or other symptoms are associated with saphenous reflux, AND the symptoms significantly interfere with activities of daily living, AND conservative management including compression therapy for at least 3 months has not improved the symptoms.

Treatment of accessory saphenous veins by surgery or endovenous radiofrequency or laser ablation, microfoam sclerotherapy, that do not meet the criteria described above is considered cosmetic and NOT MEDICALLY NECESSARY.

SYMPTOMATIC VARICOSE TRIBUTARIES
The following treatments are considered MEDICALLY NECESSARY as a component of the treatment of symptomatic varicose tributaries when performed either at the same time or following prior treatment (surgical, radiofrequency or laser) of the saphenous veins (none of these techniques has been shown to be superior to another):

- Stab avulsion
- Hook phlebectomy
- Sclerotherapy
- Transilluminated powered phlebectomy.

Treatment of symptomatic varicose tributaries, when performed either at the same time or following prior treatment of saphenous veins using any other techniques than noted above is considered INVESTIGATIONAL.

PERFORATOR VEINS
Surgical ligation (including subfascial endoscopic perforator surgery) or endovenous radiofrequency or laser ablation of incompetent perforator veins may be considered MEDICALLY NECESSARY as a treatment of leg ulcers associated with chronic venous insufficiency when the following conditions have been met:

- There is demonstrated perforator reflux, AND
- The superficial saphenous veins (great, small or accessory saphenous and symptomatic varicose tributaries) have been previously eliminated, AND
- Ulcers have not resolved following combined superficial vein treatment and compression therapy for at least 3 months, AND
- The venous insufficiency is not secondary to deep venous thromboembolism.

Ligation or ablation of incompetent perforator veins performed concurrently with superficial venous surgery is NOT MEDICALLY NECESSARY.

TELANGIECTASIA
Treatment of telangiectasia such as spider veins, angiomata, and hemangiomata is considered cosmetic and **NOT MEDICALLY NECESSARY**.

**OTHER VEINS**
Techniques for conditions not specifically listed above are **INVESTIGATIONAL**, including, but not limited to:
- Sclerotherapy techniques, other than microfoam sclerotherapy, of great, small or accessory saphenous veins
- Sclerotherapy of perforator veins
- Sclerotherapy of isolated tributary veins without prior or concurrent treatment of saphenous veins
- Stab avulsion, hook phlebectomy, or transilluminated powered phlebectomy of perforator, great or small saphenous, or accessory saphenous veins
- Endovenous radiofrequency or laser ablation of tributary veins
- Mechanochemical ablation of any vein
- Cyanoacrylate adhesive of any vein
- Endovenous cryoablation of any vein.

**Medicare HMO BlueSM and Medicare PPO BlueSM Members**

Medical necessity criteria and coding guidance for Medicare Advantage members living in **Massachusetts** can be found through the link(s) below.

**Local Coverage Determinations (LCDs) for National Government Services, Inc.**

Local Coverage Determination (LCD): Varicose Veins of the Lower Extremity, Treatment of (L33575)

**Note:** To review the specific LCD, please remember to click “accept” on the CMS licensing agreement at the bottom of the CMS webpage.

For medical necessity criteria and coding guidance for Medicare Advantage members living outside of **Massachusetts**, please see the Centers for Medicare and Medicaid Services website at [https://www.cms.gov](https://www.cms.gov) for information regarding your specific jurisdiction.

**Prior Authorization Information**

**Inpatient**
- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

**Outpatient**
- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

<table>
<thead>
<tr>
<th>Outpatient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Managed Care (HMO and POS)</td>
<td>Prior authorization is <strong>not required</strong>.</td>
</tr>
<tr>
<td>Commercial PPO and Indemnity</td>
<td>Prior authorization is <strong>not required</strong>.</td>
</tr>
<tr>
<td>Medicare HMO BlueSM</td>
<td>Prior authorization is <strong>not required</strong>.</td>
</tr>
<tr>
<td>Medicare PPO BlueSM</td>
<td>Prior authorization is <strong>not required</strong>.</td>
</tr>
</tbody>
</table>

**CPT Codes / HCPCS Codes / ICD Codes**

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.
The above medical necessity criteria MUST be met for the following codes to be covered for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:

### CPT Codes

<table>
<thead>
<tr>
<th>CPT codes:</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>36465</td>
<td>Injection of non-compounded foam sclerosant with ultrasound compression maneuvers to guide dispersion of the injectate, inclusive of all imaging guidance and monitoring; single incompetent extremity truncal vein (eg, great saphenous vein, accessory saphenous vein)</td>
</tr>
<tr>
<td>36466</td>
<td>Injection of non-compounded foam sclerosant with ultrasound compression maneuvers to guide dispersion of the injectate, inclusive of all imaging guidance and monitoring; multiple incompetent truncal veins (eg, great saphenous vein, accessory saphenous vein), same leg</td>
</tr>
<tr>
<td>36470</td>
<td>Injection of sclerosant; single incompetent vein (other than telangiectasia)</td>
</tr>
<tr>
<td>36471</td>
<td>Injection of sclerosant; multiple incompetent veins (other than telangiectasia), same leg</td>
</tr>
<tr>
<td>36475</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, radiofrequency; first vein treated</td>
</tr>
<tr>
<td>36476</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, radiofrequency; second and subsequent veins treated in a single extremity, each through separate access sites (list separately in addition to code for primary procedure)</td>
</tr>
<tr>
<td>36478</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, laser; first vein treated</td>
</tr>
<tr>
<td>36479</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, laser; subsequent vein(s) treated in a single extremity, each through separate access sites (List separately in addition to code for primary procedure)</td>
</tr>
<tr>
<td>37700</td>
<td>Ligation and division of long saphenous vein at saphenofemoral junction, or distal interruptions</td>
</tr>
<tr>
<td>37718</td>
<td>Ligation, division, and stripping, short saphenous vein</td>
</tr>
<tr>
<td>37722</td>
<td>Ligation, division, and stripping, long (greater) saphenous veins from saphenofemoral junction to knee or below</td>
</tr>
<tr>
<td>37735</td>
<td>Ligation and division and complete stripping of long and short saphenous veins with radical excision of ulcer and skin graft and/or interruption of communicating veins of lower leg, with excision of deep fascia</td>
</tr>
<tr>
<td>37765</td>
<td>Stab phlebectomy of varicose veins, one extremity; 10-20 stab incisions</td>
</tr>
<tr>
<td>37766</td>
<td>Stab phlebectomy of varicose veins, one extremity; more than 20 incisions</td>
</tr>
<tr>
<td>37780</td>
<td>Ligation and division of short saphenous vein at saphenopopliteal junction</td>
</tr>
<tr>
<td>37785</td>
<td>Ligation, division, and/or excision of varicose vein cluster(s), one leg</td>
</tr>
</tbody>
</table>

### HCPCS Codes

<table>
<thead>
<tr>
<th>HCPCS codes:</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2202</td>
<td>Echosclerotherapy</td>
</tr>
</tbody>
</table>

The following ICD Diagnosis Codes are considered medically necessary when submitted with the CPT and/or HCPCS codes above if medical necessity criteria are met:

### ICD-10 Diagnosis Codes

<table>
<thead>
<tr>
<th>ICD-10-CM diagnosis codes:</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I83.001</td>
<td>Varicose veins of unspecified lower extremity with ulcer of thigh</td>
</tr>
</tbody>
</table>
I83.002 Varicose veins of unspecified lower extremity with ulcer of calf
I83.003 Varicose veins of unspecified lower extremity with ulcer of ankle
I83.004 Varicose veins of unspecified lower extremity with ulcer of heel and midfoot
I83.005 Varicose veins of unspecified lower extremity with ulcer other part of foot
I83.008 Varicose veins of unspecified lower extremity with ulcer other part of lower leg
I83.009 Varicose veins of unspecified lower extremity with ulcer of unspecified site
I83.011 Varicose veins of right lower extremity with ulcer of thigh
I83.012 Varicose veins of right lower extremity with ulcer of calf
I83.013 Varicose veins of right lower extremity with ulcer of ankle
I83.014 Varicose veins of right lower extremity with ulcer of heel and midfoot
I83.015 Varicose veins of right lower extremity with ulcer other part of foot
I83.018 Varicose veins of right lower extremity with ulcer other part of lower leg
I83.019 Varicose veins of right lower extremity with ulcer of unspecified site
I83.021 Varicose veins of left lower extremity with ulcer of thigh
I83.022 Varicose veins of left lower extremity with ulcer of calf
I83.023 Varicose veins of left lower extremity with ulcer of ankle
I83.024 Varicose veins of left lower extremity with ulcer of heel and midfoot
I83.025 Varicose veins of left lower extremity with ulcer other part of foot
I83.028 Varicose veins of left lower extremity with ulcer other part of lower leg
I83.029 Varicose veins of left lower extremity with ulcer of unspecified site
I83.10 Varicose veins of unspecified lower extremity with inflammation
I83.11 Varicose veins of right lower extremity with ulcer of unspecified site
I83.12 Varicose veins of left lower extremity with inflammation
I83.201 Varicose veins of unspecified lower extremity with both ulcer of thigh and inflammation
I83.202 Varicose veins of unspecified lower extremity with both ulcer of calf and inflammation
I83.203 Varicose veins of unspecified lower extremity with both ulcer of ankle and inflammation
I83.204 Varicose veins of unspecified lower extremity with both ulcer of heel and midfoot and inflammation
I83.205 Varicose veins of unspecified lower extremity with both ulcer other part of foot and inflammation
I83.208 Varicose veins of unspecified lower extremity with both ulcer of other part of lower extremity and inflammation
I83.209 Varicose veins of unspecified lower extremity with both ulcer of unspecified site and inflammation
I83.211 Varicose veins of right lower extremity with both ulcer of thigh and inflammation
I83.212 Varicose veins of right lower extremity with both ulcer of calf and inflammation
I83.213 Varicose veins of right lower extremity with both ulcer of ankle and inflammation
I83.214 Varicose veins of right lower extremity with both ulcer of heel and midfoot and inflammation
I83.215 Varicose veins of right lower extremity with both ulcer other part of foot and inflammation
I83.218 Varicose veins of right lower extremity with both ulcer of other part of lower extremity and inflammation
I83.219 Varicose veins of right lower extremity with both ulcer of unspecified site and inflammation
I83.221 Varicose veins of left lower extremity with both ulcer of thigh and inflammation
I83.222 Varicose veins of left lower extremity with both ulcer of calf and inflammation
I83.223 Varicose veins of left lower extremity with both ulcer of ankle and inflammation
I83.224 Varicose veins of left lower extremity with both ulcer of heel and midfoot and inflammation
Varicose veins of left lower extremity with both ulcer other part of foot and inflammation
Varicose veins of left lower extremity with both ulcer of other part of lower extremity and inflammation
Varicose veins of left lower extremity with both ulcer of unspecified site and inflammation
Varicose veins of right lower extremity with pain
Varicose veins of left lower extremity with pain
Varicose veins of bilateral lower extremities with pain
Varicose veins of unspecified lower extremity with pain
Varicose veins of right lower extremity with other complications
Varicose veins of left lower extremity with other complications
Varicose veins of bilateral lower extremities with other complications
Varicose veins of unspecified lower extremity with other complications
Venous insufficiency (chronic) (peripheral)

The above medical necessity criteria MUST be met for the following codes to be covered for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:

<table>
<thead>
<tr>
<th>CPT codes</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>37500</td>
<td>Vascular endoscopy, surgical, with ligation of perforator veins, subfascial (SEPS)</td>
</tr>
<tr>
<td>37760</td>
<td>Ligation of perforator veins, subfascial, radical (Linton type) including skin graft, when performed, open, 1 leg</td>
</tr>
<tr>
<td>37761</td>
<td>Ligation of perforator vein(s), subfascial, open, including ultrasound guidance, when performed, 1 leg</td>
</tr>
</tbody>
</table>

The following ICD Diagnosis Codes are considered medically necessary when submitted with the CPT codes above if medical necessity criteria are met:

**ICD-10 Diagnosis Codes**

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<tr>
<td>I83.001</td>
<td>Varicose veins of unspecified lower extremity with ulcer of thigh</td>
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<tr>
<td>I83.002</td>
<td>Varicose veins of unspecified lower extremity with ulcer of calf</td>
</tr>
<tr>
<td>I83.003</td>
<td>Varicose veins of unspecified lower extremity with ulcer of ankle</td>
</tr>
<tr>
<td>I83.004</td>
<td>Varicose veins of unspecified lower extremity with ulcer of heel and midfoot</td>
</tr>
<tr>
<td>I83.005</td>
<td>Varicose veins of unspecified lower extremity with ulcer other part of foot</td>
</tr>
<tr>
<td>I83.008</td>
<td>Varicose veins of unspecified lower extremity with ulcer other part of lower leg</td>
</tr>
<tr>
<td>I83.009</td>
<td>Varicose veins of unspecified lower extremity with ulcer of unspecified site</td>
</tr>
<tr>
<td>I83.011</td>
<td>Varicose veins of right lower extremity with ulcer of thigh</td>
</tr>
<tr>
<td>I83.012</td>
<td>Varicose veins of right lower extremity with ulcer of calf</td>
</tr>
<tr>
<td>I83.013</td>
<td>Varicose veins of right lower extremity with ulcer of ankle</td>
</tr>
<tr>
<td>I83.014</td>
<td>Varicose veins of right lower extremity with ulcer of heel and midfoot</td>
</tr>
<tr>
<td>I83.015</td>
<td>Varicose veins of right lower extremity with ulcer other part of foot</td>
</tr>
<tr>
<td>I83.018</td>
<td>Varicose veins of right lower extremity with ulcer other part of lower leg</td>
</tr>
<tr>
<td>I83.019</td>
<td>Varicose veins of right lower extremity with ulcer of unspecified site</td>
</tr>
<tr>
<td>I83.021</td>
<td>Varicose veins of left lower extremity with ulcer of thigh</td>
</tr>
<tr>
<td>I83.022</td>
<td>Varicose veins of left lower extremity with ulcer of calf</td>
</tr>
<tr>
<td>I83.023</td>
<td>Varicose veins of left lower extremity with ulcer of ankle</td>
</tr>
<tr>
<td>I83.024</td>
<td>Varicose veins of left lower extremity with ulcer of heel and midfoot</td>
</tr>
<tr>
<td>I83.025</td>
<td>Varicose veins of left lower extremity with ulcer other part of foot</td>
</tr>
<tr>
<td>CPT Code</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>I83.028</td>
<td>Varicose veins of left lower extremity with ulcer other part of lower leg</td>
</tr>
<tr>
<td>I83.029</td>
<td>Varicose veins of left lower extremity with ulcer of unspecified site</td>
</tr>
<tr>
<td>I87.2</td>
<td>Venous insufficiency (chronic) (peripheral)</td>
</tr>
</tbody>
</table>

The following CPT code is considered not medically necessary for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:

**CPT Codes**

<table>
<thead>
<tr>
<th>CPT codes</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>36468</td>
<td>Injection(s) of sclerosant for spider veins (telangiectasia), limb or trunk</td>
</tr>
</tbody>
</table>

The following CPT codes are considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity:

**CPT Codes**

<table>
<thead>
<tr>
<th>CPT codes</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>36473</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, mechanochemical; first vein treated</td>
</tr>
<tr>
<td>36474</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, mechanochemical; subsequent vein(s) treated in a single extremity, each through separate access sites</td>
</tr>
</tbody>
</table>

The following CPT codes are considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

**CPT Codes**

<table>
<thead>
<tr>
<th>CPT codes</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>36482</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, by transcatheter delivery of a chemical adhesive (eg, cyanoacrylate) remote from the access site, inclusive of all imaging guidance and monitoring, percutaneous; first vein treated</td>
</tr>
<tr>
<td>36483</td>
<td>Endovenous ablation therapy of incompetent vein, extremity, by transcatheter delivery of a chemical adhesive (eg, cyanoacrylate) remote from the access site, inclusive of all imaging guidance and monitoring, percutaneous; subsequent vein(s) treated in a single extremity, each through separate access sites (List separately in addition to code for primary procedure)</td>
</tr>
<tr>
<td>0524T</td>
<td>Endovenous catheter directed chemical ablation with balloon isolation of incompetent extremity vein, open or percutaneous, including all vascular access, catheter manipulation, diagnostic imaging, imaging guidance and monitoring</td>
</tr>
</tbody>
</table>

**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, 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. One-way valves are present within all veins to direct the return of blood up the lower limb. Because the 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 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
Treatment of venous reflux/venous insufficiency seeks to reduce abnormal pressure transmission from the deep to the superficial veins. Conservative medical treatment consists of elevation of the extremities, graded compression, and wound care when indicated. Conventional surgical treatment consists of identifying and correcting the site of reflux by ligation of the incompetent junction followed by stripping of the vein to redirect venous flow through veins with intact valves. While most venous reflux is secondary to incompetent valves at the saphenofemoral or saphenopopliteal junctions, reflux may also occur at incompetent valves in the perforator veins or the deep venous system. The competence of any single valve is not static and may be pressure-dependent. For example, accessory saphenous veins may have independent saphenofemoral or saphenopopliteal junctions that become incompetent when the great or small saphenous veins are eliminated, and blood flow is diverted through the accessory veins.

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 veins. Tributaries are veins that empty into a larger vein. Treatment of venous reflux typically includes the following:
1. Identification by preoperative Doppler ultrasonography of the valvular incompetence
2. Control of the most proximal point of reflux, traditionally by suture ligation of the incompetent saphenofemoral or saphenopopliteal junction
3. Removal of the superficial vein from circulation, eg, by stripping of the great and/or small saphenous veins.
4. 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. They include sclerotherapy, transilluminated powered phlebectomy, and thermal ablation using cryotherapy, high-frequency radio waves (200-300 kHz), or laser energy.

Thermal Ablation
Radiofrequency ablation is performed using a specially designed catheter inserted through a small incision in the distal medial thigh to within 1 to 2 cm of the saphenofemoral junction. The catheter is slowly withdrawn, closing the vein. Laser ablation is performed similarly; a laser fiber is introduced into the great saphenous vein under ultrasound guidance; the laser is 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 mm in diameter and helps to protect adjacent tissue from thermal damage during treatment of the small saphenous vein.

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 commonly produced by forcibly mixing a gas (eg, air or carbon dioxide) with a liquid sclerosant (eg, polidocanol or sodium tetradecyl sulfate). The foam is produced at the time of treatment.

Endovenous Mechanochemical Ablation
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 mechanical
Ablation 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 (radiofrequency ablation, endovenous laser ablation).

**Cyanoacrylate Adhesive**
A cyanoacrylate 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, and surgical incisions or other skin wounds.

**Transilluminated Powered Phlebectomy**
Transilluminated powered phlebectomy is an alternative to stab avulsion and 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 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 transilluminated powered phlebectomy might decrease surgical time, decrease complications such as bruising and lead to a faster recovery than established procedures.

**Treatment of Perforator Veins**
Perforator veins cross through the fascia and connect the deep and superficial venous systems. Incompetent perforating veins were originally treated with an open surgical procedure, called the Linton procedure, which involved a long medial calf incision to expose all posterior, medial, and paramedial perforators. While this procedure was associated with healing of ulcers, it was largely abandoned due to a high incidence of wound complications. The Linton procedure was subsequently modified by using a series of perpendicular skin flaps instead of a longitudinal skin flap to provide access to incompetent perforator veins in the lower part of the leg. The modified Linton procedure may occasionally be used to close incompetent perforator veins that cannot be reached by less invasive procedures.

Subfascial endoscopic perforator surgery is a less invasive surgical procedure for the treatment of incompetent perforators and has been reported since the mid-1980s. 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. Endovenous ablation of incompetent perforator veins with sclerotherapy and radiofrequency ablation has also been reported.

**Summary**
A variety of treatment modalities are available to treat varicose veins/venous insufficiency, including surgery, thermal ablation, and sclerotherapy. 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.

**Saphenous Veins**
For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive endovenous thermal ablation (radiofrequency or laser), the evidence includes randomized controlled trials (RCTs) and systematic reviews of controlled trials. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. There are a number of large RCTs and systematic reviews of RCTs assessing endovenous thermal ablation of the saphenous veins. Comparison with the standard of ligation and stripping at 2- to 5-year follow-up has supported the use of both endovenous laser ablation and radiofrequency ablation (RFA). Evidence has suggested that ligation
and stripping lead to more neovascularization, while thermal ablation leads to more recanalization, resulting in similar clinical outcomes for endovenous thermal ablation and surgery. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive microfoam sclerotherapy, the evidence includes RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. For physician-compounded sclerotherapy, there is high variability in success rates and some reports of serious adverse events. By comparison, rates of occlusion with the microfoam sclerotherapy (polidocanol 1%) approved by the Food and Drug Administration are similar to those reported for endovenous laser ablation or stripping. Results of a noninferiority trial of physician-compounded sclerotherapy have indicated that, once occluded, recurrence rates at 2 years are similar to those of ligation and stripping. Together, this evidence indicates that the more consistent occlusion with the microfoam sclerotherapy preparation will lead to recurrence rates similar to ligation and stripping in the longer term. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

Based on the available evidence, clinical input obtained in 2015, and clinical practice guidelines, the use of endovenous RFA, endovenous laser ablation, and microfoam sclerotherapy are considered to improve outcomes when used in the saphenous veins. For treatment of saphenous tributaries at the same time or following treatment of the saphenous vein, stab avulsion, hook phlebectomy, sclerotherapy, or transilluminated powered phlebectomy improve outcomes.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive mechanochemical ablation, the evidence includes 2 RCTs and case series. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. Mechanochemical ablation is a combination of liquid sclerotherapy with mechanical abrasion. Potential advantages of this procedure compared with thermal ablation are that mechanochemical ablation does not require multiple needle sticks with tumescent anesthesia and may result in less pain during the procedure. One RCT with high loss to follow-up has been published, and a larger RCT is comparing mechanochemical ablation with RFA has reported early results. These short-term results have suggested that intraprocedural pain is lower with mechanochemical ablation than with RFA. However, liquid sclerotherapy is not as effective as thermal ablation techniques for saphenous veins, and mechanochemical ablation has been assessed in relatively few patients and for short durations. Longer follow-up in larger RCTs is needed to evaluate its efficacy and durability compared with established procedures. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive cyanoacrylate adhesive, the evidence includes an RCT and case series. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The short-term efficacy of cyanoacrylate adhesion has been shown to be noninferior to RFA at 3 months in a multicenter noninferiority trial. Longer follow-up in a larger number of patients is needed to determine the durability of this treatment. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive cryoablation, the evidence includes RCTs and multicenter series. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The short-term efficacy of cyanoacrylate adhesion has been shown to be noninferior to RFA at 3 months in a multicenter noninferiority trial. Longer follow-up in a larger number of patients is needed to determine the durability of this treatment. The evidence is insufficient to determine the effects of the technology on health outcomes.

**Varicose Tributary Veins**

For individuals who have varicose tributary veins who receive ablation (stab avulsion, sclerotherapy, or phlebectomy) of tributary veins, the evidence includes RCTs and systematic reviews of RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The literature has shown that sclerotherapy is effective for treating tributary veins following
occlusion of the saphenofemoral or saphenopopliteal junction and saphenous veins. No studies have been identified comparing RFA or laser ablation of tributary veins with standard procedures (microphlebectomy and/or sclerotherapy). Transilluminated powered phlebectomy is effective at removing varicosities; outcomes are comparable to available alternatives such as stab avulsion and hook phlebectomy. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

**Perforator Veins**
For individuals who have perforator vein reflux who receive ablation (eg, subfascial endoscopic perforator surgery) of perforator veins, the evidence includes RCTs and systematic reviews of RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The literature has indicated that the routine ligation or ablation of incompetent perforator veins is not necessary for the treatment of varicose veins/venous insufficiency at the time of superficial vein procedures. However, when combined superficial vein procedures and compression therapy have failed to improve symptoms (ie, ulcers), treatment of perforator vein reflux may be as beneficial as any alternative (eg, deep vein valve replacement). Comparative studies are needed to determine the most effective method of ligating or ablating incompetent perforator veins. Subfascial endoscopic perforator surgery has been shown to be as effective as the Linton procedure with a reduction in adverse events. Although only 1 case series has been identified showing an improvement in health outcomes, endovenous ablation with specialized laser or radiofrequency probes has been shown to effectively ablate incompetent perforator veins with a potential decrease in morbidity compared with surgical interventions. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

**Policy History**

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<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>1/2019</td>
<td>Clarified coding information.</td>
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<tr>
<td>1/2018</td>
<td>Clarified coding information.</td>
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<tr>
<td>10/2017</td>
<td>Clarified coding information.</td>
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<tr>
<td>6/2017</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>5/2017</td>
<td>Clarified coding information.</td>
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<tr>
<td>1/2017</td>
<td>Clarified coding information for the 2017 code changes.</td>
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<tr>
<td>4/2016</td>
<td>BCBSA National medical policy review. The requirement of failure of compression therapy was removed from the policy statements on ulceration secondary to venous stasis and recurrent superficial thrombophlebitis; terminology was changed from greater and lesser to great and small saphenous veins. Effective 4/1/2016.</td>
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<td>1/2015</td>
<td>Clarified coding information.</td>
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<tr>
<td>9/2014</td>
<td>LCD Varicose Veins of the Lower Extremity, Treatment of (L25519) added.</td>
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<tr>
<td>6/2014</td>
<td>Updated Coding section with ICD10 procedure and diagnosis codes. Effective 10/2015.</td>
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<tr>
<td>11/2013</td>
<td>Added HCPCS code S2202.</td>
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**Information Pertaining to All Blue Cross Blue Shield Medical Policies**

Click on any of the following terms to access the relevant information:
- Medical Policy Terms of Use
- Managed Care Guidelines
- Indemnity/PPO Guidelines
- Clinical Exception Process
- Medical Technology Assessment Guidelines

**References**

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