Policy Number	**MED202.064**
Policy Effective Date	**12/15/2025**

Diagnosis and Treatment of Chronic Cerebrospinal Venous Insufficiency in Multiple Sclerosis

Table of Contents

Related Policies (if applicable)
None

Disclaimer

Carefully check state regulations and/or the member contract.
Each benefit plan, summary plan description or contract defines which services are covered, which services are excluded, and which services are subject to dollar caps or other limitations, conditions or exclusions. Members and their providers have the responsibility for consulting the member's benefit plan, summary plan description or contract to determine if there are any exclusions or other benefit limitations applicable to this service or supply. **If there is a discrepancy between a Medical Policy and a member's benefit plan, summary plan description or contract, the benefit plan, summary plan description or contract will govern.**

Coverage

The identification and subsequent treatment of chronic cerebrospinal venous insufficiency in individuals with multiple sclerosis (MS) **is considered not medically necessary**.

Policy Guidelines

None.

Description

Chronic cerebrospinal venous insufficiency (CCSVI) may be associated with multiple sclerosis (MS), although this is a controversial area of research. Correction of CCSVI in patients with MS has been attempted using percutaneous venoplasty. The intent of this procedure is to relieve MS symptoms by improving venous drainage of the central nervous system. Correction of CCSVI by this method may be referred to as the “Liberation Procedure”.

Background

Multiple sclerosis is generally considered a chronic inflammatory demyelinating disease of the central nervous system (brain, spinal cord, optic nerve) believed to be triggered by an autoimmune response to myelin. However, in part due to the periventricular predilection of the lesions of MS, vascular etiologies of CCSVI have also been considered. The core foundation of this vascular theory is that venous drainage from the brain is abnormal due to outflow obstruction in the draining jugular vein and/or azygos veins. This abnormal venous drainage, which is characterized by special ultrasound criteria, is said to cause intracerebral flow disturbance or outflow problems that lead to periventricular deposits. In the CCSVI theory, these deposits have a similarity to the iron deposits seen around the leg veins of patients with chronic deep vein thrombosis. Balloon dilatation, with or without stenting, has been proposed to treat the outflow problems, thereby alleviating CCSVI and MS complaints.

The following 5 criteria were defined by Zamboni et al. in 2009 as features of CCSVI. (1) To make the diagnosis of CCSVI, at least 2 of the 5 criteria need to be present:

1. Reflux constantly present (for a duration >0.8 seconds) in the supine and upright positions at the level of an internal jugular or vertebral vein. This parameter was evaluated during a short breath-hold following normal breathing and not under Valsalva maneuver.
2. Reflux at the level of veins of the deep cerebral system (for a duration >0.5 seconds). This was evaluated with the patient in the sitting and supine positions, and venous flow was enhanced by inviting the patient to breath in.
3. Stenosis (<0.3 centimeter [cm]), valve abnormalities, and septa on B-mode imaging.
4. Absence of flow at the level of the internal jugular or vertebral vein, despite numerous deep inspirations.
5. No increase in the diameter of the internal jugular vein when changing from an upright to a supine position (lack of change in pressure).

In 2014, the International Society for Neurovascular Disease (ISNVD) published modifications to the Zamboni Doppler ultrasound protocol and described protocols for additional imaging using magnetic resonance and intravascular ultrasound to supplement Doppler ultrasound. (2) The revised ultrasound criteria, originally proposed in 2011, are:

1. Reflux present in the internal jugular or vertebral veins:
    a. Bidirectional flow in 1 or both internal jugular veins in both positions (supine or upright) or bidirectional flow in 1 position with absence of flow in the other position;
    b. Reversal of flow or bidirectional flow in 1 or both venous veins in both positions.
2. Internal jugular vein stenosis:
    a. Reduction of proximal internal jugular vein cross-sectional area in the supine position to no more than 0.3 cm^2, which does not increase with Valsalva maneuver;
    b. Structural abnormalities.
3. Absence of detectable flow in the internal jugular veins or venous veins despite numerous deep inspirations and bidirectional flow detected in the other position on the same side.
4. The cross-sectional area of the internal jugular vein is greater in the seated than supine position or is similar in the 2 positions.

5. Bidirectional flow in the intracranial vein and sinuses (recommended as an additional criterion).

Regulatory Status
In 2012, the U.S. Food and Drug Administration (FDA) issued a safety warning regarding the potential for adverse events following endovascular interventions to treat CCSVI. Reports of adverse events obtained by the FDA include but are not limited to balloon rupture, thromboembolism, cranial nerve damage, abdominal bleeding, and death. This communication included the caveat that clinical trials of this procedure require FDA approval and an investigational device exemption due to potential for harm. (3)

In 2017, the FDA issued an additional safety communication to alert the public about an experimental procedure call Transvascular Autonomic Modulation (TVAM). (4) This procedure is being promoted as treatment for a variety of conditions even though it has not been formally studied in clinical trials. The procedure uses balloon angioplasty devices outside the scope of the FDA-approved indications for use. At least one physician claims the procedure treats the signs and symptoms of autonomic dysfunction in a number of neurological disorders. The following recommendation for offered:

"For physicians providing care and potential clinical investigators: Be aware that the FDA has not cleared or approved any balloon angioplasty devices for the treatment of autonomic dysfunction, and has not been presented with data to support the use of such devices in treating autonomic dysfunction. Discuss the benefits and risks of all available treatments for autonomic dysfunction with patients, including the adverse events generally associated with catheter-guided endovascular intervention and those related specifically to use of balloon angioplasty devices for TVAM. Inform patients that TVAM is experimental, and that the FDA has not been presented with any data in order to assure the safety and effectiveness of balloon angioplasty devices used in this procedure. If you become aware of patients who have undergone the procedure, monitor them for potential complications such as excessive pain, discomfort, bruising, excessive bleeding from the puncture site, and stroke or stroke-like complications."

Endovascular correction of CCSVI insufficiency is a surgical procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration.

Rationale

This policy is based on a review of relevant professional association recommendations.

International Society for Neurovascular Disease (ISNVD)
In 2014, the ISNVD published a position statement on detection of extracranial venous abnormalities indicative of CCSVI. (1) The document concluded: "Although some CNS [central nervous system] disorders have been linked to the presence and severity of CCSVI, the ultimate

cause-consequence relationship has not been firmly established. Therefore, it is not clear at this time which patient population should undergo the noninvasive and invasive studies for detection of extracranial venous abnormalities…."

Cardiovascular and Interventional Radiological Society of Europe (CIRSE)
The 2011 CIRSE commentary on the treatment of CCSVI noted that:
"Thus far, no trial data are available, and there is currently no randomized controlled trial (RCT) in progress. Therefore, the basis for this new treatment rests on anecdotal evidence and successful testimonies by patients on the Internet. CIRSE believes that this is not a sound basis on which to offer a new treatment, which could have possible procedure-related complications, to an often-desperate patient population." (5)

Society for Interventional Radiology (SIR)
In 2010, SIR published a position statement on the association between CCSVI and MS and on the efficacy of endovascular treatments. (6) The recommendations included the following statements:

- "At present, SIR considers the published literature to be inconclusive on whether CCSVI is a clinically important factor in the development and/or progression of MS, and on whether balloon angioplasty and/or stent placement are clinically effective in patients with MS."
- "SIR strongly supports the urgent performance of high-quality clinical research to determine the safety and efficacy of interventional MS therapies and is actively working to promote and expedite the completion of the needed studies."

National Institute for Health and Clinical Excellence (NICE)
In 2019, NICE updated their guidance on the use of percutaneous venoplasty to treat CCSVI in patients with MS. (7) This guidance contained the following statements on the diagnosis and treatment of CCSVI: "Current evidence on percutaneous venoplasty for chronic cerebrospinal venous insufficiency (CCSVI) in multiple sclerosis (MS) shows that there are serious complications and that it provides no benefit. Therefore, this procedure should not be used in the management of multiple sclerosis."

European Society of Neurosonology and Cerebral Hemodynamics
The European Society of Neurosonology and Cerebral Hemodynamics (ESNCH) issued a statement on CCSVI and MS in 2012. (8) The ESNCH statement indicated that the proposed criteria for the diagnosis of CCSVI were questionable because of methodologic and technologic errors as well as lack of validation. The statement strongly discouraged any interventional treatment for CCSVI in MS, such as transluminal angioplasty and/or stenting.

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	37238, 37239, 37248, 37249, 61630, 61635
HCPCS Codes	None

*Current Procedural Terminology (CPT®) ©2024 American Medical Association: Chicago, IL.

References

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2. Zivadinov R, Bastianello S, Dake MD, et al. Recommendations for multimodal noninvasive and invasive screening for detection of extracranial venous abnormalities indicative of chronic cerebrospinal venous insufficiency: a position statement of the International Society for Neurovascular Disease. J Vasc Interv Radiol. Nov 2014; 25(11):1785-1794. PMID 25255703
3. FDA Safety Communication: Chronic Cerebrospinal Venous Insufficiency Treatment in Multiple Sclerosis Patients. May 10, 2012. Available at <https://www.fda.gov> (accessed November 18, 2025).
4. FDA Safety Communication: Balloon angioplasty devices to treat autonomic dysfunction. March 08, 2017. Available at <https://www.fda.gov> (accessed November 18, 2025).
5. Reekers JA, Lee MJ, Belli AM, et al. Cardiovascular and Interventional Radiological Society of Europe commentary on the treatment of chronic cerebrospinal venous insufficiency. Cardiovasc Intervent Radiol. Feb 2011; 34(1):1-2. PMID 21136256
6. Vedantham S, Benenati JF, Kundu S, et al. Interventional endovascular management of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis: a position statement by the Society of Interventional Radiology, endorsed by the Canadian Interventional Radiology Association. J Vasc Interv Radiol. Sep 2010; 21(9):1335-1337. PMID 20800776
7. National Institute for Health and Clinical Excellence (NICE). Percutaneous venoplasty for chronic cerebrospinal venous insufficiency for multiple sclerosis [IPG640] (Jan 30, 2019). Available at <https://www.nice.org.uk> (accessed November 18, 2025).
8. CCSVI and MS: a statement from the European Society of neurosonology and cerebral hemodynamics. J Neurol. Dec 2012; 259-12:2585-2589. PMID 22648477

Centers for Medicare and Medicaid Services (CMS)

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 and Medicaid Services (CMS) 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 <https://www.cms.hhs.gov>.

Policy History/Revision	
Date	**Description of Change**
12/15/2025	Document updated. Coverage unchanged. Added references 4 and 8; others removed.
05/15/2024	Document updated with literature review. Coverage unchanged. Added reference 23; others updated/removed.
03/15/2023	Reviewed. No changes.
04/15/2022	Document updated with literature review. Coverage unchanged. Added references 4, 20, 21, 28; Others updated.
02/15/2021	Reviewed. No changes.
05/01/2020	Document updated with literature review. Coverage unchanged. Added references 4, 10, 19, 22.
11/01/2018	Reviewed. No changes.
01/15/2018	Document updated with literature review. Coverage unchanged.
10/01/2016	Reviewed. No changes.
08/15/2015	Document updated with literature review. Coverage statement changed from experimental, investigational and/or unproven to not medically necessary. Coverage now states: The identification and subsequent treatment of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis (MS) is considered not medically necessary.
10/15/2014	Document updated with literature review. Coverage unchanged.
03/15/2012	New medical document. The identification and subsequent treatment of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis is considered experimental, investigational and/or unproven.