

2.01.97 Alcohol Injections for Treatment of Peripheral Morton Neuromas

Original Policy Date: July 31, 2015 Effective Date: August 1, 2021

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Policy Statement

Alcohol injections are considered **investigational** for treatment of Morton neuroma.

NOTE: Refer to [Appendix A](#) to see the policy statement changes (if any) from the previous version.

Policy Guidelines**Coding**

The following CPT code would be used to report these procedures:

- **64632:** Destruction by neurolytic agent; plantar common digital nerve

Description

Morton neuroma is a common and painful compression neuropathy of the dorsal foot that is also referred to as intermetatarsal neuroma, interdigital neuroma, interdigital neuritis, and Morton metatarsalgia. Morton neuroma is usually treated with conservative measures, surgery, or minimally invasive procedures. Alcohol injection is a minimally invasive alternative to open surgery to treat Morton neuroma. Alcohol causes chemical neurolysis through dehydration, necrosis, and precipitation of the treated area, ultimately destroying the lesion after multiple injections.

Related Policies

- N/A

Benefit Application

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal mandates (e.g., Federal Employee Program [FEP]) prohibits plans from denying Food and Drug Administration (FDA)-approved technologies as investigational. In these instances, plans may have to consider the coverage eligibility of FDA-approved technologies on the basis of medical necessity alone.

Regulatory Status

Alcohol injection for Morton neuroma is a surgical procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration.

Rationale

Background Neuroma

A neuroma is a growth or tumor consisting of nerve tissue that develops as part of a normal reparative process following nerve injury. The injury may be due to chronic irritation, pressure, stretch, poor repair of nerve lesions or previous neuromas, laceration, crush injury, or blunt trauma.¹ Neuromas typically appear 6 to 10 weeks after trauma, with most presenting within 1 to 12 months after injury or surgery. They may gradually enlarge over 2 to 3 years and may or may not be painful. Pain from a neuroma may be secondary to traction on the nerve by scar tissue, compression of the sensitive nerve endings by adjacent soft tissues, ischemia of the nervous tissue, or ectopic foci of ion channels that elicit neuropathic pain. Patients may describe the pain as low-intensity dull pain or intense paroxysmal burning pain, often triggered by external stimuli such as touch or temperature. Neuroma formation has been implicated as a contributor of neuropathic pain in residual limb pain, postthoracotomy, postmastectomy, and post-herniorrhaphy pain syndromes. They may coexist with phantom pain or can predispose to it.

Morton Neuroma

Morton neuroma is a common and painful compression neuropathy of the common digital nerve of the foot that may also be referred to as interdigital neuroma, interdigital neuritis, or Morton metatarsalgia.^{1,2,3} It is histologically characterized by perineural fibrosis, endoneurial edema, axonal degeneration, and local vascular proliferation. Thus, some investigators do not consider Morton neuroma to be a true neuroma; instead, they consider it to be an entrapment neuropathy occurring secondary to compression of the common digital nerve under the overlying transverse metatarsal ligament. The incidence and prevalence of Morton neuroma are not clear, but it appears 10-fold more often in women than in men, with an average age at presentation of around 50 years.⁴

The pain associated with Morton neuroma is usually throbbing, burning, or shooting, localized to the plantar aspect of the foot. It is typically located between the 3rd and 4th metatarsal heads, although it may appear in other proximal locations.^{1,2} The pain may radiate to the toes and can be associated with paresthesia. The pain can be severe, and the condition may become debilitating to the extent that patients are apprehensive about walking or touching their foot to the ground. It is aggravated by walking in shoes with a narrow toe box or high heels that cause excessive pronation and excessive forefoot pressure; removal of tight shoes typically relieves the pain.

Diagnosis

Although a host of imaging methods are used to diagnosis Morton neuroma, including plain radiographs, magnetic resonance imaging, and ultrasonography, objective findings are unique to this condition and are primarily used to establish a clinical diagnosis.¹ Thus, a patient's toes often show splaying or divergence. Patients may describe the feeling of a "lump" on the foot bottom or a feeling of walking on a rolled-up or wrinkled sock. Clinical examination with medial and lateral compression may reproduce the painful symptoms with a palpable "click" on interspace compression (Mulder sign).⁵

Treatment

Management of patients diagnosed with Morton neuroma typically starts with conservative approaches, such as the use of metatarsal pads in shoes and orthotic devices that alter supination and pronation of the affected foot.³ These approaches are aimed at reducing pressure and irritation of the affected nerve. They may provide relief, but they do not alter the underlying pathology. There is little evidence supporting the effectiveness or comparative effectiveness of these practices.^{2,6,7} In a case series, Bennett et al (1995) evaluated a 3-stage protocol of private practice patients (N=115) who advanced from stage I (education plus footwear modifications, and a metatarsal pad) to stage II (steroid injections with local anesthetic or local anesthetic alone) and into stage III (surgical resection) if treated while in

stages I and II did not bring relief within 3 months.⁶ Overall, 97 (85%) of 115 patients believed that pain had been reduced with the treatment program. However, twenty-four (21%) patients eventually required surgical excision of the nerve and 23 (96%) of those had satisfactory results.

Ablation Techniques

Alternative approaches to treat refractory Morton neuroma include minimally invasive procedures aimed at in situ destruction, including intralesional alcohol injections.² Dehydrated ethanol has been shown to inhibit nerve function in vitro, has high affinity for nerve tissue, and causes direct damage to nerve cells via dehydration, cell necrosis, and precipitation of protoplasm, leading to neuritis and a pattern of Wallerian degeneration. Technically, ethanol is a sclerosant that causes chemical neurolysis of the nerve pathology but is considered an ablative procedure for this evidence review. The use of ultrasound guidance during this procedure has been shown to increase surgical accuracy, improve outcomes, and shorten procedure duration.

Literature Review

Evidence reviews assess the clinical evidence to determine whether the use of a technology improves the net health outcome. Broadly defined, health outcomes are length of life, quality of life, and ability to function-including benefits and harms. Every clinical condition has specific outcomes that are important to patients and to managing the course of that condition. Validated outcome measures are necessary to ascertain whether a condition improves or worsens; and whether the magnitude of that change is clinically significant. The net health outcome is a balance of benefits and harms.

To assess whether the evidence is sufficient to draw conclusions about the net health outcome of a technology, 2 domains are examined: the relevance and the quality and credibility. To be relevant, studies must represent one or more intended clinical use of the technology in the intended population and compare an effective and appropriate alternative at a comparable intensity. For some conditions, the alternative will be supportive care or surveillance. The quality and credibility of the evidence depend on study design and conduct, minimizing bias and confounding that can generate incorrect findings. The randomized controlled trial is preferred to assess efficacy; however, in some circumstances, nonrandomized studies may be adequate. Randomized controlled trials are rarely large enough or long enough to capture less common adverse events and long-term effects. Other types of studies can be used for these purposes and to assess generalizability to broader clinical populations and settings of clinical practice.

Intralesional Alcohol Injections for Morton Neuroma

Clinical Context and Therapy Purpose

The purpose of intralesional alcohol injection therapy for patients who have Morton neuroma is to provide a treatment option that is an alternative to or an improvement on existing therapies.

The question addressed in this evidence review is: Does use of alcohol injections improve health outcomes for patients with Morton neuroma compared with conservative therapy or surgery?

The following PICO was used to select literature to inform this review.

Populations

The relevant population of interest is individuals with Morton neuroma.

Interventions

The therapy being considered is an intralesional injection of alcohol.

Comparators

The following therapies are currently being used: conservative therapy (e.g., rest, metatarsal supports) and surgical excision.

Outcomes

The general outcomes of interest are reduction in pain, improvement in function, and patient satisfaction.

Patients are followed within 1 to 2 weeks after an injection to determine pain reduction and patient satisfaction. Additional injections may occur in subsequent 1 to 2 months to achieve the level of desired pain reduction for the patient.

Study Selection Criteria

Methodologically credible studies were selected using the following principles:

- To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
- In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
- To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
- Studies with duplicative or overlapping populations were excluded.

Review of Evidence

Case Series

No randomized controlled trials or nonrandomized interventional trials were identified. Several published case series have used alcohol injections to treat Morton neuroma. Summaries of these series appear in Table 1.

Treatment in all the case series consisted of injections of alcohol combined with an anesthetic (e.g., lidocaine or bupivacaine). Injections were repeated at 2-week intervals, if symptoms persisted. On average, across studies, each patient received approximately 4 injections. Ultrasound guidance was used in all of the series described in Table 1. Outcomes were patient-reported and consisted of various measures of pain and satisfaction.

The largest series identified was reported by Pasquali et al (2015), who described a retrospective 2-center case series of 508 patients who received ultrasound-guided alcohol injection from 2001 to 2012 for Morton neuroma.² Eligible patients presented with 2nd or 3rd web space symptoms and had failed 3 months of conservative treatment with insoles and nonsteroidal anti-inflammatory drugs. Patients were injected with a 50% alcohol plus mepivacaine solution, with a mean of 3 injections (range, 1-4 injections) per neuroma. Pain at the Morton neuroma site was assessed on a visual analog scale (VAS) ranging from 0 to 10, by local adverse reactions at 1 week postprocedure (0 = no reaction; 1 = minimal swelling, pain, redness; 2 = significant swelling, pain redness), and patient-reported satisfaction. Pain scores improved from a mean preinjection VAS score of 8.7 to a mean postinjection score of 3.6 at 1 year (change in VAS score, $p < 0.001$). At 1 year postinjection, 74.5% of patients were completely satisfied with the procedure. Fifty (9.3%) feet eventually required operative excision.

Table 1. Case Series of Intralesional Alcohol Injections for Morton Neuroma

Study	N	Treatment	Mean FU, mo	Results	Surgical FU, n (%)
Perini et al(2016) ⁸	220	Alcohol, lidocaine	19	<ul style="list-style-type: none"> • Median NRS pain score improved from 9 to 3 • 88.6% reported reductions in limitations of everyday activities • Reduction in neuropathic pain (100% to 45%) • No change in nociceptive pain (47% to 53%) 	14 (6)
Pasquali et al(2015) ²	508	Alcohol, mepivacaine	12	<ul style="list-style-type: none"> • Mean VAS pain score improved from 8.7 to 3.6 • 74.5% completely satisfied 	50 (9)

Study	N	Treatment	Mean FU, mo	Results	Surgical FU, n (%)
Musson et al(2012) ⁹	75	Alcohol, bupivacaine	14	• Mean VAS pain score improved from 8.5 to 4.2• 32% complete symptom relief; 33% partial relief; 35% no relief	17 (20)
Hughes et al(2007) ¹⁰	101	Alcohol, bupivacaine	12	• Mean VAS pain score improved from 8 to 0• 84% "essentially pain free"; 8% "mild/moderate pain"; 8% "no difference"	3 (3)
Fanucci et al(2004) ¹¹	40	Alcohol, carbocaine	10	• 21 completely satisfied; 9 satisfied with minor complications; 6 satisfied with major complications; 4 dissatisfied	4 (10)

FU: follow-up; NRS: numeric rating scale; VAS: visual analog scale.

Morgan et al (2014)¹² reported on a systematic review that included the studies above published through February 2012 plus another by Dockery (1999)¹³ and compared the need for subsequent surgery after alcohol injections for Morton neuroma with or without ultrasound guidance. Reviewers concluded that use of ultrasound guidance for alcohol injections to treat Morton neuroma could reduce the need for subsequent surgery better than unguided treatments.

Summary of Evidence

For individuals who have Morton neuroma who receive intralesional alcohol injection(s), the evidence includes retrospective case series. Relevant outcomes are symptoms, resource utilization, and treatment-related morbidity. The body of evidence is limited, consisting of case series reporting on the treatment response of patients with refractory Morton neuroma. The available series have generally reported that some patients experience pain relief and express satisfaction with the procedure. Some evidence has suggested that surgery after failed cases of alcohol injections is more complex and challenging than in untreated patients due to the presence of fibrosis. There is a lack of controlled trials comparing alcohol injections with alternative therapies, and there are no controlled studies comparing outcomes for alcohol injections with those for surgery in surgical candidates. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Supplemental Information

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the evidence review conclusions.

Clinical Input From Physician Specialty Societies and Academic Medical Centers

In response to requests from Blue Cross Blue Shield Association, input was received from 2 specialty societies and 5 academic medical centers in 2015. Input was consistent that the use of alcohol injections to treat Morton neuroma is investigational.

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

Association of Extremity Nerve Surgeons

The Association of Extremity Nerve Surgeons issued practice guidelines (2020) which drew the following conclusions about alcohol injections.¹⁴ [:

"The literature regarding alcohol injections is equivocal. There may be some short-term positive effect, but longterm effect is poor for this therapy. Some of the literature recommends using 30%

alcohol solution to get effective results. However, new research has shown the use of 30% ethanol alcohol does not create any measurable change in the histology of nerve tissue. There is also moderate risk of necrosis of surrounding tissues.[60] As a general rule, we do not advocate the use of alcohol injections."

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

Ongoing and Unpublished Clinical Trials

A search of [ClinicalTrials.gov](https://clinicaltrials.gov) in April 2021 did not identify any ongoing or unpublished trials that would likely influence this review.

References

1. Rajput K, Reddy S, Shankar H. Painful neuromas. *Clin J Pain*. Sep 2012; 28(7): 639-45. PMID 22699131
2. Jain S, Mannan K. The diagnosis and management of Morton's neuroma: a literature review. *Foot Ankle Spec*. Aug 2013; 6(4): 307-17. PMID 23811947
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4. Wu KK. Morton's interdigital neuroma: a clinical review of its etiology, treatment, and results. *J Foot Ankle Surg*. Mar-Apr 1996; 35(2): 112-9; discussion 187-8. PMID 8722878
5. MULDER JD. The causative mechanism in morton's metatarsalgia. *J Bone Joint Surg Br*. Feb 1951; 33-B(1): 94-5. PMID 14814167
6. Bennett GL, Graham CE, Mauldin DM. Morton's interdigital neuroma: a comprehensive treatment protocol. *Foot Ankle Int*. Dec 1995; 16(12): 760-3. PMID 8749346
7. Pasquali C, Vulcano E, Novario R, et al. Ultrasound-guided alcohol injection for Morton's neuroma. *Foot Ankle Int*. Jan 2015; 36(1): 55-9. PMID 25367249
8. Perini L, Perini C, Tagliapietra M, et al. Percutaneous alcohol injection under sonographic guidance in Morton's neuroma: follow-up in 220 treated lesions. *Radiol Med*. Jul 2016; 121(7): 597-604. PMID 26883232
9. Musson RE, Sawhney JS, Lamb L, et al. Ultrasound guided alcohol ablation of Morton's neuroma. *Foot Ankle Int*. Mar 2012; 33(3): 196-201. PMID 22734280
10. Hughes RJ, Ali K, Jones H, et al. Treatment of Morton's neuroma with alcohol injection under sonographic guidance: follow-up of 101 cases. *AJR Am J Roentgenol*. Jun 2007; 188(6): 1535-9. PMID 17515373
11. Fanucci E, Masala S, Fabiano S, et al. Treatment of intermetatarsal Morton's neuroma with alcohol injection under US guide: 10-month follow-up. *Eur Radiol*. Mar 2004; 14(3): 514-8. PMID 14531002
12. Morgan P, Monaghan W, Richards S. A systematic review of ultrasound-guided and non-ultrasound-guided therapeutic injections to treat Morton's neuroma. *J Am Podiatr Med Assoc*. Jul 2014; 104(4): 337-48. PMID 25076076
13. Dockery GL. The treatment of intermetatarsal neuromas with 4% alcohol sclerosing injections. *J Foot Ankle Surg*. Nov-Dec 1999; 38(6): 403-8. PMID 10614611
14. The Association of Extremity Nerve Surgeons Clinical Practice Guidelines, v. 2.0. 2020. Available at: <https://www.aens.us/images/aens/AENS%20CPG%20-%202.0%20-%20FINAL.pdf>. Accessed May 27, 2021.
15. Blue Cross Blue Shield Association. Medical Policy Reference Manual, No. 2.01.97 (June 2021).

Documentation for Clinical Review

- No records required

Coding

This Policy relates only to the services or supplies described herein. Benefits may vary according to product design; therefore, contract language should be reviewed before applying the terms of the Policy.

The following codes are included below for informational purposes. Inclusion or exclusion of a code(s) does not constitute or imply member coverage or provider reimbursement policy. Policy Statements are intended to provide member coverage information and may include the use of some codes for clarity. The Policy Guidelines section may also provide additional information for how to interpret the Policy Statements and to provide coding guidance in some cases.

Type	Code	Description
CPT®	64632	Destruction by neurolytic agent; plantar common digital nerve
HCPCS	None	

Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

Effective Date	Action
07/31/2015	BCBSA Medical Policy adoption
08/01/2016	Policy revision without position change
08/01/2017	Policy revision without position change
08/01/2018	Policy revision without position change
09/01/2019	Policy revision without position change
09/01/2020	Annual review. No change to policy statement. Literature review updated. Policy title changed from Alcohol Injections for Treatment of Peripheral Neuromas to current one.
08/01/2021	Annual review. No change to policy statement. Literature review updated.

Definitions of Decision Determinations

Medically Necessary: Services that are Medically Necessary include only those which have been established as safe and effective, are furnished under generally accepted professional standards to treat illness, injury or medical condition, and which, as determined by Blue Shield, are: (a) consistent with Blue Shield medical policy; (b) consistent with the symptoms or diagnosis; (c) not furnished primarily for the convenience of the patient, the attending Physician or other provider; (d) furnished at the most appropriate level which can be provided safely and effectively to the patient; and (e) not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of the Member's illness, injury, or disease.

Investigational/Experimental: A treatment, procedure, or drug is investigational when it has not been recognized as safe and effective for use in treating the particular condition in accordance with generally accepted professional medical standards. This includes services where approval by the federal or state governmental is required prior to use, but has not yet been granted.

Split Evaluation: Blue Shield of California/Blue Shield of California Life & Health Insurance Company (Blue Shield) policy review can result in a split evaluation, where a treatment, procedure, or drug will be considered to be investigational for certain indications or conditions, but will be deemed safe and effective for other indications or conditions, and therefore potentially medically necessary in those instances.

Prior Authorization Requirements (as applicable to your plan)

Within five days before the actual date of service, the provider must confirm with Blue Shield that the member's health plan coverage is still in effect. Blue Shield reserves the right to revoke an authorization prior to services being rendered based on cancellation of the member's eligibility. Final determination of benefits will be made after review of the claim for limitations or exclusions.

Questions regarding the applicability of this policy should be directed to the Prior Authorization Department at (800) 541-6652, or the Transplant Case Management Department at (800) 637-2066 ext. 3507708 or visit the provider portal at www.blueshieldca.com/provider.

Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. Blue Shield of California may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over medical policy and must be considered first in determining covered services. Member contracts may differ in their benefits. Blue Shield reserves the right to review and update policies as appropriate.

Appendix A

POLICY STATEMENT (No changes)	
BEFORE	AFTER
Alcohol Injections for Treatment of Peripheral Morton Neuromas 2.01.97 Policy Statement: Alcohol injections are considered investigational for treatment of Morton neuroma.	Alcohol Injections for Treatment of Peripheral Morton Neuromas 2.01.97 Policy Statement: Alcohol injections are considered investigational for treatment of Morton neuroma.