Anthem

Clinical UM Guideline

Subject: Injection Treatment for Morton's Neuroma
Guideline #: CG-SURG-25
Status: Reviewed

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Description

This document addresses the indications for injection treatment of Morton's neuroma, a common paroxysmal neuralgia affecting the web spaces of the toes.

Clinical Indications

Medically Necessary:

Injections of anesthetic, sclerosing (neurolytic), or steroid agents are considered **medically necessary** for treatment of Morton's neuroma when **all** of the following conservative therapies have failed:

A. Padding or orthotic devices (these can provide support to reduce pressure and compression on the nerve); **and**
B. Activity modification (to reduce repetitive pressure on the nerve); **and**
C. Changes in shoe wear (that is, shoes with a wide box toe reduce compression of the metatarsal heads and reduce pressure on the nerve); **and**
D. Medications unless otherwise contraindicated (for example, nonsteroidal anti-inflammatory drugs which help reduce inflammation).

Not Medically Necessary:

Injection treatment of Morton's neuroma is considered **not medically necessary** when the above criteria are not met.

Coding

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. 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.

When services may be Medically Necessary when criteria are met:

CPT	
64455	Injection(s), anesthetic agent and/or steroid, plantar common digital nerve(s) (eg, Morton's neuroma)
64632	Destruction by neurolytic agent; plantar common digital nerve [when specified as injection of neuolytic agent]
ICD-10 Procedure	
3E0T33Z	Introduction of anti-inflammatory into peripheral nerves and plexi, percutaneous approach
3E0T3BZ	Introduction of anesthetic agent into peripheral nerves and plexi, percutaneous approach
3E0T3TZ	Introduction of destructive agent into peripheral nerves and plexi, percutaneous approach
ICD-10 Diagnosis	
G57.60	Lesion of plantar nerve, unspecified lower limb
G57.61	Lesion of plantar nerve, right lower limb
G57.62	Lesion of plantar nerve, left lower limb
G57.63	Lesion of plantar nerve, bilateral lower limbs

When services are Not Medically Necessary:
For the procedure and diagnosis codes listed above when criteria are not met.

Discussion/General Information

A neuroma is typically described as a benign tumor of a nerve characterized by exuberant proliferation of nerve endings. Morton's neuroma is not a tumor, but a thickening of the tissue that surrounds the digital nerve leading to the toes. It occurs as the nerve passes under the ligament connecting the toe bones (metatarsals) in the forefoot. The cause of Morton's neuroma is unclear and most frequently develops between the third and fourth toes. Possible causes include nerve entrapment, the abnormal anatomy of the plantar nerve in this location, structural/mechanical foot abnormalities, trauma, or excessive pressure.

Multiple treatment approaches have been utilized for Morton's neuroma including conservative care, such as orthotics, padding, and alternative shoe styles to relieve the pressure on the forefoot. More invasive treatments include anesthetic blocks, sclerosing or steroid injections, and surgical excision of the painful nerve. The peer-reviewed literature contains varied conclusions. In a Cochrane review, Thomson and colleagues (2004) cited that there is insufficient evidence with which to assess the effectiveness of surgical and non-surgical interventions for Morton's neuroma, and that well-designed trials are needed to begin to establish an evidence base for the treatment of Morton's neuroma pain.

Serial ethanol injection therapy has been reported as an effective alternative to surgical excision at 10 months follow-up (Fanucci, 2004). Hughes and colleagues (2007) reported on a large case series of 101 individuals with a confirmed diagnosis of Morton's neuroma. A total of four ultrasound-guided injections (total, 0.5 mL of 20% ethanol) were administered at 14-day intervals with an average follow-up of 10.5 months after the last injection. Additional injections were performed at 14-day intervals if the response was partial or incomplete based on participant-assessed level of pain. The main outcome was pain measured on a visual analog scale (VAS) scored from 0 to 10. Partial or total symptom improvement was reported by 94% of the participants, with 84% becoming totally

pain-free. The median VAS pain score decreased from 8 before treatment to 0 after treatment (p<0.001). No major complications were reported. A total of 3 participants went on to surgical resection. Musson and colleagues (2012) reported on outcomes of a case series of 75 individuals who received intralesional alcohol injections for symptomatic Morton's neuroma. A standard course of treatment consisted of 4 injections administered 2 weeks apart. Outcomes were participant-reported pain score on a VAS scale (range, 0-10) with a mean follow-up of approximately 14 months (range, 6-26 months). The mean VAS pain score was 8.5 (range, 4-10) before treatment and 4.2 (range, 0-10) after treatment (p<0.001). At follow-up, 32% of participants reported complete symptom resolution, 33% reported partial relief, and 35% reported no relief. Complications of the injections were rare (n=3) and self-resolving. A total of 17 participants (20%) went on to surgery at the time of last follow-up.

Success rates with corticosteroid injections for Morton's neuroma vary greatly. Marcovic and colleagues (2008) found that 26 of 39 individuals (66%) had a positive outcome at 9 months after a single ultrasound-guided cortisone injection. Complete pain relief was achieved in 11 of 39 (28%) neuromas after treatment. A total of 12 of 39 (31%) neuromas did not respond to conservative treatment and required surgery. The results of treatment suggested improvement in efficacy if injection was used early. The size of the lesion measured on ultrasound showed no correlation with pain relief after injection. Makki and colleagues (2012) prospectively compared the effectiveness of a single ultrasound-guided steroid injection in the treatment of Morton's neuroma and whether the response to injection correlated with the size of the neuroma. A total of 43 participants with clinical features of Morton's neuroma underwent ultrasound scan assessment. A single corticosteroid injection was given using 40 mg of methylprednisolone along with 1% lidocaine. Participants were divided into two groups on the basis of the size of the lesion measured on the scan. Group 1 included participants with neuromas of 5 mm or less and group 2 participants had neuromas larger than 5 mm. A VAS score for pain (scale 0 to 10), an American Orthopaedic Foot and Ankle Society (AOFAS) score, and a Johnson satisfaction scale were used to assess participants before injection and at 6 weeks, 6 months, and 12 months following the injection. Group 1 (lesion ≤ 5 mm) included 17 participants and group 2 (lesion > 5 mm) had 22 participants. The VAS scores, AOFAS scores, and Johnson scale improved significantly in both groups at 6 weeks (p<0.0001). At 6 months post injection, this improvement remained significant only in group 1 with all scores (p<0.001). At 12 months, there was no difference between both groups and outcome scores nearly approached preinjection scores. At the final review, 2 participants in group 1 and 4 participants in group 2 had severe recurrent symptoms and underwent surgical excision of the neuroma after they rejected the offer for a repeat injection (p=0.6). The authors concluded that the effectiveness of cortisone injection appears to be more significant and long-lasting for Morton's neuroma lesions smaller than 5 mm.

Gurdezi and colleagues (2013) reported on the long-term effectiveness of alcohol injection for Morton's neuroma (mean follow-up: 61 months, range, 33-73 months) in 45 individuals from the original cohort of the Hughes study (2013). Of the 45 individuals evaluable at 5 years, 16 (36%) had undergone surgical treatment and 13 (29%) individuals had only transient relief of symptoms (2 weeks or fewer). Only 29% (13 of 45) remained symptom free. The authors concluded that alcohol injection for Morton's neuroma does not offer permanent resolution of symptoms for most individuals and can be associated with complications such as immense pain at the time of injection despite local anesthetic infiltration (n=9 of 12 adverse events). Despite wide use of alcohol injection, no randomized, double blind, placebo-controlled study exists to verify the efficacy of this treatment in comparison to longstanding similar therapies such as corticosteroid injection for the treatment of Morton's neuroma.

Thomson and colleagues (2013) conducted a pragmatic, participant-blinded randomized controlled trial (RCT) to determine whether corticosteroid injection was an effective treatment for Morton's neuroma. A total of 131 participants with Morton's neuroma (mean age, 53 years) were randomized to receive either corticosteroid and anesthetic (1 ml methylprednisolone [40 mg] and 1 ml 2% lignocaine) or anesthetic alone (2 ml 1% lidocaine). An ultrasonographic image was obtained before treatment, and injections were performed with the needle placed under ultrasonographic guidance. The primary outcome was the difference in patient global assessment of foot health between the 2 groups at 3 months after injection as measured by a 100-unit VAS score using parameters of "best imaginable health state" and "worst imaginable health state." The global assessment of foot health in the corticosteroid group was significantly better at 3 months compared with the control group (mean difference, 14.1 scale points [95% confidence interval [CI], 5.5 to 22.8 points]; p=0.002). The difference between the groups was also significant at 1 month. Significant and nonsignificant improvements associated with the corticosteroid injection were observed for measures of pain, function, and patient global assessment of general health at 1 and 3 months after injection. The size of the neuroma as determined by ultrasonography did not significantly influence the treatment effect.

Jain and colleagues (2013) reviewed the peer-reviewed published literature of the available treatment options for Morton's neuroma, stating current nonoperative treatment strategies include shoe-wear modifications, custom made orthoses, and injections of local anesthetic agents, sclerosing agents, and steroids; however, despite a lack of high quality evidence-based research, some success was reported with use of local steroid injection, nerve decompression, and neurectomy.

Morgan and colleagues (2014) performed a systematic review that included the studies previously discussed and an earlier study by Dockery and colleagues (1999). The review compared the need for subsequent surgery after alcohol injections for Morton's neuroma under ultrasound guidance versus unguided injections. The authors suggested the use of ultrasound guidance for alcohol injections to treat Morton's neuroma can reduce the need for subsequent surgery compared with unguided treatments.

Pasquali and colleagues (2015) retrospectively assessed the effectiveness of ultrasound-guided alcohol injection to treat Morton's neuroma. A total of 508 individuals with 540 second or third web-space Morton's neuromas who had failed 3 months of conservative treatment (insoles and nonsteroidal anti-inflammatory drugs) were included in this study. A mean number of 3.0 (range, 1 to 4) injections were performed for each neuroma. The mean local inflammatory reaction was 0.7 (range, 0 to 2). There were no other local or systemic complications. The overall mean pre-injection VAS score was 8.7 (range, 6 to 10), while the post-injection VAS score at 1 year was 3.6 (range, 0 to 9). The delta VAS between the pre- and post-injection was statistically significant (p<0 .0001). At 1-year follow-up 74.5% of participants were satisfied with the procedure.

Lizano-Diez and colleagues (2017) conducted a prospective, double-blind, RCT of 41 subjects comparing the effectiveness of 3 corticosteroid injections plus a local anesthetic or local anesthetic alone (control) for the treatment of Morton's neuroma. VAS score for pain and the AOFAS scores (metatarsophalangeal, interphalangeal) were obtained at baseline, after each injection, and 3 and 6 months after the last injection. At 3 and 6 months after treatment completion, there were no significant between-group differences compared with baseline values in outcomes of pain and functional improvement. The authors concluded that injection of a corticosteroid plus a local anesthetic was not superior to a local anesthetic alone in terms of pain and functional improvement in this population with Morton's neuroma. Limitations of this study include the small sample size, 15% (6 of 41) of subjects were lost to follow-up, no objective outcomes were obtained after the treatment (such as magnetic resonance imaging evaluation), and the short follow-up of 6 months.

In 2021, Hau and colleagues conducted a prospective follow-up study of a previously completed RCT. Originally, 45 neuromas in 36 individuals were injected with a single corticosteroid injection. The original study was designed to determine if ultrasound guidance affected efficacy of the injection; no difference was found. The current study was conducted to determine if efficacy was sustained for a mean follow-up of 4.8 years. The original corticosteroid injection remained effective in 36% (n = 16) of participants. In each of these cases, the VAS pain score (p < 0.001) and Manchester-Oxford Foot Questionnaire Index (p=0.001) remained significantly improved relative to pretreatment scores. A total of 11 neuromas received a second injection and 55% continued to be asymptomatic in over the

follow-up period. This study provides additional published evidence of sustainable efficacy of corticosteroid injections for the treatment and management of Morton's neuroma.

A number of meta-analyses and systematic reviews have been published establishing corticosteroid injections as a sound treatment option for Morton's neuroma that is in accordance with generally accepted standards of medical practice (Choi, 2021; Edwards, 2021; Lu, 2020; Mathews, 2019; Thompson, 2020).

In 2009 the American College of Foot and Ankle Surgeons (ACFAS) released a clinical practice guideline on the diagnosis and treatment of forefoot disorders - Morton's intermetatarsal neuroma. The guideline was retitled in 2012 as a clinical consensus statement which identifies the use of conservative care that focuses on elimination of pressure and irritation of the nerve. Other interventions include injection therapies for pain relief using local anesthetic blocks, corticosteroids and neurolytic alcohol injections. The consensus statement reports that 3 to 7 dilute alcohol injections of 4% alcohol injected at 5 to 10 day intervals has been associated with an 89% success rate with 82% of individuals achieving complete relief of symptoms. However, overuse of corticosteroid injections was cautioned as it may result in atrophy of the plantar fat pad as well as joint subluxation.

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1. American College of Foot and Ankle Surgeons (ACFAS). Clinical Practice Guideline Forefoot Disorders Panel: Diagnosis and treatment of forefoot disorders. Section 3. Morton's intermetatarsal neuroma. J Foot Ankle Surg. 2009; 48(2):251-256.
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Websites for Additional Information

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History

Status	Date	Action
Reviewed	05/11/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Discussion/General Information, References, and Websites sections.
Reviewed	05/12/2022	MPTAC review. Discussion/General Information, References, and Websites sections updated.
Reviewed	05/13/2021	MPTAC review. Discussion/General Information, References, and Websites sections updated. Reformatted Coding section.
Reviewed	05/14/2020	MPTAC review. Discussion/General Information, References, and Websites sections updated.
Reviewed	06/06/2019	MPTAC review. Discussion/General Information, Coding, References, and Websites sections updated.
Reviewed	07/26/2018	MPTAC review. The document header wording updated from “Current Effective Date” to “Publish Date.” Updated Discussion/General Information, References, and Websites for Additional Information sections. Updated Coding section to include ICD-10-CM G57.63.
Revised	08/03/2017	MPTAC review. Updated formatting in Clinical Indications section. Removed abbreviation from Clinical Indications section. Updated Discussion/General Information, References, and Websites for Additional Information sections.
Reviewed	08/04/2016	MPTAC review. Updated Discussion, References, and Websites for Additional Information sections. Removed ICD-9 codes from Coding section.
Revised	08/06/2015	MPTAC review. Format changes to the medically necessary statement. Updated Discussion, References, and Websites for Additional Information sections.
Reviewed	11/13/2014	MPTAC review. Updated Description, Discussion, References, and Websites for Additional Information sections.
Revised	11/14/2013	MPTAC review. Added not medically necessary statement to Clinical Indications. Format change to medically necessary statement and Coding section. Updated Description, References, and Websites for Additional Information sections.
Reviewed	11/08/2012	MPTAC review. Updated Coding, Discussion, References, Websites for Additional Information and Index.
Reviewed	11/17/2011	MPTAC review. Discussion and References updated.
Reviewed	11/18/2010	MPTAC review. References updated.
Reviewed	11/19/2009	MPTAC review. Discussion and References updated. Place of service removed.
Reviewed	11/20/2008	MPTAC review. References updated. Coding section updated to include 01/01/2009 CPT changes, removed HCPCS S2135 deleted 12/31/2008.
Reviewed	11/29/2007	MPTAC review. References updated.
Revised	12/07/2006	MPTAC revision. Deleted surgical procedures from criteria. References updated.
New	09/14/2006	MPTAC initial guideline development.