Medical Policy
Ablation Procedures for Peripheral Neuromas

Table of Contents
- Policy: Commercial
- Policy: Medicare
- Authorization Information
- Coding Information
- Description
- Policy History
- Information Pertaining to All Policies
- References

Policy Number: 719
BCBSA Reference Number: 7.01.147
NCD/LCD: N/A

Related Policies
None

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO Blue<sup>SM</sup> and Medicare PPO Blue<sup>SM</sup> Members

Minimally invasive ablation procedures, RFA, and cryoablation, are considered INVESTIGATIONAL for treatment of peripheral neuromas.

Prior Authorization Information
Pre-service approval is required for all inpatient services for all products. See below for situations where prior authorization may be required or may not be required. Yes indicates that prior authorization is required. No indicates that prior authorization is not required.

<table>
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<tr>
<th>Outpatient</th>
<th>Commercial Managed Care (HMO and POS)</th>
<th>This is not a covered service.</th>
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<tr>
<td>Commercial PPO and Indemnity</td>
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<td>Medicare HMO Blue&lt;sup&gt;SM&lt;/sup&gt;</td>
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<tr>
<td>Medicare PPO Blue&lt;sup&gt;SM&lt;/sup&gt;</td>
<td>This is not a covered service.</td>
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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 following codes are included below for informational purposes only; this is not an all-inclusive list.

According to the policy statement above, the following CPT codes are considered investigational for the conditions listed for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

### CPT Codes

<table>
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<tr>
<th>CPT codes:</th>
<th>Code Description</th>
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<tr>
<td>64632</td>
<td>Destruction by neurolytic agent; plantar common digital nerve</td>
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<tr>
<td>64640</td>
<td>Destruction by neurolytic agent; other peripheral nerve or branch</td>
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**Description**

A neuroma is pathology of peripheral nerve that develops as part of a normal reparative process. Neuromas may develop after injury to a nerve or as a result of chronic irritation, pressure, stretch, poor repair of nerve lesions or previous neuromas, laceration, crush injury, or blunt trauma. Neuromas typically appear about 6 to 10 weeks after trauma, with most presenting within 1 to 12 months after injury or surgery. They may gradually enlarge over a period of 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 a 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 postherniorrhaphy pain syndromes. They may coexist with phantom pain or can predispose to it.

**Morton’s Neuroma**

Morton’s intermetatarsal neuroma is a common and painful compression neuropathy of the common digital nerve of the foot that may be referred to by other names, including interdigital neuroma, interdigital neuritis, and interdigital or Morton’s metatarsalgia. It is histologically characterized by perineural fibrosis, endoneurial edema, axonal degeneration, and local vascular proliferation. Thus, some investigators do not consider Morton’s neuroma to be a true neuroma; instead they consider it to be an entrapment neuropathy that occurs secondary to compression of the common digital nerve under the overlying transverse metatarsal ligament. The incidence and prevalence of Morton’s 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.

The pain associated with Morton’s neuroma is usually a throbbing, burning, or shooting pain that is 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 close-by locations. 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 and anxious 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.

Although a host of imaging methods may be used to aid diagnosis of Morton’s 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. 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).

**Treatment of Morton’s Neuroma**

Management of patients with a diagnosis of Morton’s neuroma typically proceeds through a pathway that
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. These approaches are aimed at reducing pressure and irritation of the affected nerve. They may provide some relief, but do not alter the underlying pathology. There is scant evidence to support the effectiveness or comparative effectiveness of these practices. In one case series, investigators evaluated a 3-stage protocol of “stepped care” through which private practice patients (N=115) advanced from stage I (education plus footwear modifications, and a metatarsal pad) to stage II (steroid injections with local anesthetic or local anesthetic alone), into stage III (surgical resection) if stages I and II did not bring relief within 3 months. Overall, 97 of 115 patients (85%) believed that they had improved with the treatment program. However, 24 patients (21%) eventually required surgical excision of the nerve, and 23 of those (96%) had satisfactory results.

Historically, surgical intervention is considered the definitive therapy. The most common procedure is open excision of the interdigital nerve pathology through a dorsal or plantar approach. A second procedure, referred to as nerve decompression with neurolysis or translocation of the affected part of the interdigital nerve, has been used to treat Morton's neuroma. Although this approach uses smaller incisions and seems to have more rapid recovery than open excision of the neuroma, it is reported to be a more demanding procedure that requires specialist training and equipment and is less common in practice. No randomized clinical trials have been reported that compared the effectiveness of different management approaches for Morton's neuroma.

A Cochrane systematic review (SR) that was originally published in 2004 showed insufficient evidence to assess the effectiveness of surgical and nonsurgical interventions for Morton's neuroma. A more recent review, published in 2013, summarized the results of surgical excision studies that included a total of 250 patients. In general, these series were poorly reported and highly heterogeneous, used disparate outcome measures, had short follow-up periods (average, 2-10 years) and could not be directly compared. In the only prospective comparative study of surgical methods, the dorsal approach resulted in earlier weight bearing (mean 16 days versus 23 days, respectively) and return to work (mean 22 days versus 37 days, respectively) compared with a plantar approach in 52 total cases at average follow-up of 3 years. Painful scars were more common with the plantar approach (n=5) compared with the dorsal approach (n=2), with only 1 patient in each group experiencing a recurrence of symptoms. Other case series of primary neurectomy showed reduction of pain in more than 50% to 100% of patients, with self-reported satisfaction rates from 52% to 86%, at mean follow-up periods that ranged from 24 to 126 months. Common complications included paresthesia (51%-82%), scar tenderness or hypersensitivity (6%-32%), and wound infection (1.4%-9.7%).

Long-term outcomes of surgical resection have been reported in 2 additional series that involved a total of 159 cases that were refractory to conservative management. One series (n=78) reported mean follow-up of 4.6 years (range, 0.8-8.1 years). With a dorsal approach, a total of 82% of patients with long-standing symptoms (mean duration, 33 months) reported excellent or good results, 10% had a fair result with restriction of activities or pain, while 8% had no improvement at all after surgery. Complications included wound infections in 8 cases that resolved with antibiotics, 5 with persistent hypersensitive scars, and 4 developing local keloid formations. Eight cases (10%) required revision due to neuroma recurrence at a mean of about 2 years after index surgery. The second long-term series (n=81) reported mean follow-up of 15.3 years (range, 10-20 years), the longest available in the literature. With a mostly dorsal approach (97% of cases), outcomes were reported excellent in 45%, good in in 32%, and fair in 15%; 8% reported poor results after surgery and were referred for revision. Paresthesia in the supplying area of the resected nerve was reported in 72% of cases, while normal sensation was reported in 26%. Other surgical complications were not reported in this series.

Ablation techniques
A third middle approach that has been investigated to treat refractory Morton's neuroma involves several minimally invasive procedures aimed at in situ destruction of the pathology: RFA and cryoablation (also known as cryoneurolysis, cryolysis, cryoanalgesia). RFA uses heat generated by an electrode that conducts electromagnetic energy into a tissue or lesion to denature proteins and destroy cells. RFA has been used to ablate a wide range of disparate tissues or lesions that include osteoid osteoma,
cardiovascular system pathologies, cervical pain syndromes, liver, lung and other cancers, and varicosities.\textsuperscript{12-23} Cryoablation uses a coolant to chill a cryoprobe to temperatures below -75 degrees Celsius, which when inserted into a lesion, freezes and kills the tissue that is treated. It has been used to treat Morton's neuroma and other chronic nerve pain syndromes, as well as many other conditions in which RFA has been used.

This Policy will primarily focus on evidence available on the use of RFA and cryoablation of painful neuromas, with emphasis on Morton's neuroma and the comparative effectiveness of these less-invasive therapies and open surgical resection of the nerve pathology.

**Summary**
The overall body of evidence evaluating the efficacy of minimally invasive ablation techniques is weak, consisting of case series reporting on outcomes following ablative treatment. There are no controlled studies to compare outcomes with those of surgery in patients who all are surgical candidates.

Three case series reported outcomes of RFA to treat Morton's neuroma. The body of evidence is highly heterogeneous in term of radiofrequency ablation protocols, prior conservative management, patient characterisitics, follow-up duration, outcome measures, and the reporting of outcomes (eg, using denominators of “feet,” “neuromas,” or “patients,” which required conversion to “patients”).

Only one retrospective case series on the use of cryoablation to treat peripheral nerve pain was identified in the literature review. This evidence is insufficient to draw conclusions on the use of cryoablation to treat Morton's neuroma, such that it is investigational for this condition. No published literature was identified on treatment of peripheral neuromas, or peripheral nerve lesions, other than studies treating Morton's neuroma.

Due to the lack of high-quality, controlled trials comparing ablative techniques with alternatives, the evidence on the use of ablative techniques for painful peripheral neuromas is insufficient to form conclusions, as a result these techniques are considered investigational for all indications.

**Policy History**

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<th>Date</th>
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<td>7/2017</td>
<td>New references added from BCBSA National medical policy.</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**