Anthem

Medical Policy

Subject: Peripheral Nerve Blocks for Treatment of Neuropathic Pain
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Description/Scope

This document addresses the use of peripheral nerve blocks for the treatment of chronic neuropathic pain that results from peripheral neuropathy. Peripheral nerve blocks consist of injections of local anesthetics, with or without adjuvants (such as steroids), near peripheral nerves or nerve ganglia. The goal of peripheral nerve blocks, which can be given as a single injection or a series of injections, is to block pain signals to the brain and thereby provide temporary pain relief.

Note: This document does not address ablative procedures, such as destruction by neurolytic agents (chemical, thermal, electrical or radiofrequency ablation), neurectomy (also called a surgical nerve block), radiosurgery or regional sympathetic nerve blocks.

Note: This document does not address nerve blocks for treatment of the following indications:

- Nerve entrapment syndromes, such as carpal tunnel, cubital tunnel, radial tunnel or tarsal tunnel syndromes.
- Impingement syndromes, such as shoulder impingement syndrome.
- Neuromas, such as Morton's Neuroma.
- Surgical pain, postoperative pain, pain caused by acute trauma and other nociceptive pain.
- Complex regional pain syndrome (CRPS) or reflex sympathetic dystrophy (RSD).

Note: For more information on related topics, please see the following:

- CG-DME-04 Electrical Nerve Stimulation, Transcutaneous, Percutaneous
- CG-MED-78 Anesthesia Services for Interventional Pain Management Procedures
- CG-SURG-25 Injection Treatment for Morton's Neuroma
- CG-SURG-89 Radiofrequency Neurolysis and Pulsed Radiofrequency Therapy for Trigeminal Neuralgia
- SURG.00112 Implantation of Occipital, Supraorbital or Trigeminal Nerve Stimulation Devices (and Related Procedures)
- SURG.00142 Genicular Procedures for Treatment of Knee Pain
- SURG.00144 Occipital and Sphenopalatine Ganglion Nerve Block Therapy for the Treatment of Headache and Neuralgia

Position Statement

Investigational and Not Medically Necessary:

Peripheral nerve blocks are considered **investigational and not medically necessary** for management of neuropathic pain, including but not limited to treatment of **any** of the following:

- Chemotherapy-induced peripheral neuropathy (CIPN);
- Chronic nonmalignant pain;
- Peripheral neuropathy (for example, diabetic neuropathy, HIV-related neuropathies, etc.);
- Trauma induced neuropathy.

Rationale

There is a paucity of well-designed trials and trials with adequate long-term follow-up addressing the use of peripheral nerve blocks for the treatment of peripheral neuropathy. In the largest randomized controlled trial (RCT) available to date, Ji (2009) enrolled 132 subjects with acute herpes zoster to undergo treatment with either standard therapy with antivirals and analgesics or standard therapy plus repeated paravertebral injections with a mixture of 10 mL 0.25% bupivacaine and 40 mg methylprednisolone every 48 hours for 1 week. Subjects were followed for 1 year, at which time data for 113 (85%) participants were available (n=58 controls, n=55 injection group). At 1 month, post-herpetic pain was reported in 13% of the injection group vs. 45% in the control group ($p<0.001$). At 3 and 6 months, post-herpetic neuralgia was significantly improved in the injection group vs. the controls ($p<0.001$ and $p<0.003$ respectively). Pain relief was sustained at 1 year ($p<0.017$).

Makharita (2012) published a double-blind RCT involving 61 individuals with post-herpetic neuralgia undergoing standard care plus placebo injection (n=30) vs. stellate ganglion block with 0.125% bupivacaine and 8 mg dexamethasone (n=31). A significantly shorter duration of pain was noted in the experimental group ($p=0.002$), and the incidence of post-herpetic neuralgia at both 3 and 6 months also significantly favored the experimental group (26.7% vs. 6.5%; $p=0.043$ and 13.3% vs. 0%; $p=0.0035$; respectively).

In 2019, Moulin and colleagues published a double-blind crossover RCT comparing IV lidocaine infusion and an active placebo infusion with diphenhydramine. The study included 34 individuals with chronic (at least 6 months duration) neuropathic pain of peripheral nerve origin with an average pain intensity score of at least 5 on a 10-point scale. Participants received infusions in random order and crossed over to the other condition after 6 weeks. The primary endpoint was average pain intensity 4 weeks after infusion. At the 4 week timepoint, the mean pain intensity score was 6.8 in the lidocaine group and 6.6 in the placebo group; the difference between groups was not statistically significant ($p=0.61$). Secondary endpoints such as a quality of life measure and an anxiety and depression scale, also did not differ significantly between groups.

In addition to the RCTs, there are many case series studies, but the small sizes of most of them and lack of comparison groups limit the ability to draw conclusions from their results (Han, 2007; Mohammed, 2013; Vancaillie, 2012; Vranken, 2000). A large series of 3960 subjects with post-herpetic neuralgia treated with Jaipur block involved the use of 2% xylocaine, 0.5% bupivacaine, and 4 mg/mL dexamethasone (Bhargava, 1998). This study found that over a 6-week course of treatment, 28% of subjects had complete relief of pain following a single injection. Another 57% had successful results after a second injection and another 11% after a third injection. Only 4% did not respond to treatment, and these subjects were primarily either over 60 years of age or had long-standing pain prior to treatment (greater than 2 years). Sangwan and colleagues (2005) described a case series involving the use of a common peroneal block with 2% xylocaine for the treatment of sciatica due to prolapsed intervertebral disc. A first injection was successful in 175/210 (87%) of subjects. A second injection was successful in the remaining 35 subjects. The authors reported significant

improvement in pain, straight-leg lift test, and analgesic consumption.

The American Society of Anesthesiologists Task Force on Chronic Pain Management and the American Society of Regional Anesthesia and Pain Medicine (2010) published practice guidelines on chronic pain management based on a review of the literature and professional opinion data. Concerning the use of peripheral nerve blocks as a single modality intervention, the guideline states:

> Studies with observational findings for peripheral nerve blocks indicate effective pain relief for assessment periods ranging from 1 to 14 days (Category 2B evidence). There is insufficient evidence to evaluate peripheral nerve blocks for longer periods of time (Category D evidence).

Category B designation is given for "suggestive literature" and level 2 indicates that "the literature contains non-comparative observational studies with associative or descriptive statistics." Category D designation is given for "insufficient evidence from literature." The Task Force also states, "Peripheral somatic nerve blocks should not be used for long-term treatment of chronic pain." This conclusion is also based on "insufficient evidence to evaluate peripheral nerve blocks for longer periods of time."

The American Academy of Neurology (AAN), American Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation published an evidence-based guideline for the treatment of painful peripheral diabetic neuropathy (Bril, 2011). This guideline does not discuss the use of peripheral nerve blocks for the treatment of diabetic neuropathy.

In summary, there is insufficient published evidence in peer-reviewed medical literature supporting the use of peripheral nerve blocks for the treatment of peripheral neuropathy, or the underlying systemic diseases that are producing peripheral neuropathy.

Background/Overview

Peripheral neuropathy is a common condition that occurs when nerves are damaged or destroyed, which interferes with the transmission of messages from the brain and spinal cord to other parts of the body. The condition can affect single or multiple nerves and involve different nerve types, including motor, sensory, and autonomic nerves. There are many different types of peripheral neuropathy, and each type has its own symptoms based on the nerves involved. Common symptoms include pain, tingling, numbness, stabbing sensations, electric-like sensations, burning sensations and weakness.

There are many causes of peripheral neuropathy. Diabetic peripheral neuropathy is a type of nerve damage that can occur in individuals with diabetes mellitus as a result of chronic high blood sugar levels that can injure nerve fibers throughout the body. While diabetes and post-herpetic neuralgia (due to herpes viral infection, shingles) are the most common causes of peripheral neuropathy, other causes include, but are not limited to, vitamin deficiency (particularly B12 and folate), alcohol abuse, autoimmune diseases (such as lupus, rheumatoid arthritis or Guillain-Barre syndrome), autoimmune deficiency syndrome (AIDS) (from the disease or its treatment), kidney failure, inherited disorders (such as amyloid polyneuropathy or Charcot-Marie-Tooth disease), exposure to toxins (such as heavy metals, gold compounds, lead, arsenic, mercury, and organophosphate pesticides), chemotherapy agents (such as vincristine) and other medications (such as antibiotics including isoniazid, metronidazole, and statins which have been linked to peripheral neuropathy), and rarely, diseases such as neurofibromatosis. Rare congenital conditions with neuropathies include Fabry disease, Tangier disease, hereditary sensory autonomic neuropathy, and hereditary amyloidosis. Often the etiology is unknown, and this condition is referred to as idiopathic peripheral neuropathy.

Ideally, treatment for peripheral neuropathy addresses the cause. For example, a vitamin deficiency can be corrected. Neuropathies that are associated with immune diseases can improve with treatment of the autoimmune disease. For diabetic peripheral neuropathy, the diabetes can be controlled, although control may not reverse the neuropathy. Other treatments include physical therapy, medications, psychosocial treatment and surgical procedures.

Medications include over-the-counter drugs such as acetaminophen, ibuprofen or aspirin, and in some instances, prescription medications such as tricyclic antidepressants and antiseizure medications. The U.S. Food and Drug Administration (FDA) has approved several drugs for the specific treatment of neuropathy including a prescription patch of 8% capsaicin (Qutenza®) for the treatment of post-herpetic neuralgia. Other FDA approved oral medications include pregabalin (Lyrica®) for the treatment of post-herpetic neuralgia and diabetic peripheral neuropathy, and duloxetine (Cymbalta) for use in the treatment of diabetic peripheral neuropathy. In some instances, opioids may be used to help control the pain that can be associated with peripheral neuropathy. Both Vitamin B6 and alpha-lipoic acid have been used for relief in chemotherapy-induced peripheral neuropathy.

Peripheral nerve blocks are a proposed treatment for managing chronic neuropathic pain that results from peripheral neuropathy. Peripheral nerve blocks are administered as an injection of a local anesthetic (such as bupivacaine or lidocaine) with or without adjuvants (such as steroids) near peripheral nerves or a nerve ganglion. A peripheral nerve block attempts to block or interrupt the conduction of pain signals to the brain and provide temporary pain relief. Peripheral nerve blocks can be given as a single injection but are often administered in a series. Pain relief has been reported to last from a few days to several months. Risks include nerve damage, infection, increased pain and local anesthetic toxicity.

Definitions

Adjuvant: A pharmacological agent that modifies the effect of other agents. For peripheral nerve blocks, adjuvants can be added to local anesthetics to decrease onset time, increase duration, increase block density or decrease toxicity. Possible adjuvants include vasoconstrictors, sodium bicarbonate, pain medications, steroids and alpha$_2$ agonists.

Ganglion: A dense group of nerve cell bodies; ganglia are part of the peripheral nervous system.

Neuropathic pain: Pain caused by damage or dysfunction of the somatosensory nervous system.

Nociceptive pain: Pain that is reported to the central nervous system by sensory neurons (nociceptors) that are stimulated from tissue injury, inflammation or diseases.

Peripheral nervous system: The collection of nerves and ganglia outside the brain and spinal cord that connects the central nervous system to the rest of the body.

Peripheral neuropathy: Chronic pain and other symptoms resulting from injury to the peripheral nervous system.

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 are Investigational and Not Medically Necessary:

CPT	
64415	Injection(s), anesthetic agent(s) and/or steroid; brachial plexus, including imaging guidance, when performed
64417	Injection(s), anesthetic agent(s) and/or steroid; axillary nerve, including imaging guidance, when performed
64447	Injection(s), anesthetic agent(s) and/or steroid; femoral nerve, including imaging guidance, when performed
64450	Injection(s), anesthetic agent(s) and/or steroid; other peripheral nerve or branch
64510	Injection, anesthetic agent; stellate ganglion (cervical sympathetic) [for upper extremity pain]
64520	Injection, anesthetic agent; lumbar or thoracic (paravertebral sympathetic) [for lower extremity pain]

ICD-10 Diagnosis	
B02.23	Postherpetic polyneuropathy
E08.40-E08.49	Diabetes mellitus due to underlying condition with neurological complications
E09.40-E09.49	Drug or chemical induced diabetes mellitus with neurological complications
E10.40-E10.49	Type 1 diabetes mellitus with neurological complications
E11.40-E11.49	Type 2 diabetes mellitus with neurological complications
E13.40-E13.49	Other specified diabetes mellitus with neurological complications
G60.0-G60.9	Hereditary and idiopathic neuropathy
G62.0-G62.9	Other and unspecified polyneuropathies
G63	Polyneuropathy in diseases classified elsewhere
G65.0-G65.2	Sequelae of inflammatory and toxic polyneuropathies
G90.01-G90.09	Idiopathic peripheral autonomic neuropathy

References

Peer Reviewed Publications:

1. Bhargava R, Bhargava S, Haldia KN, Bhargava P. Jaipur block in postherpetic neuralgia. Int J Dermatol. 1998; 37(6):465-468.
2. Han KR, Kim C, Chae YJ, Kim DW. Efficacy and safety of high concentration lidocaine for trigeminal nerve block in patients with trigeminal neuralgia. Int J Clin Pract. 2008; 62(2):248-254.
3. Ji G, Niu J, Shi Y, et al. The effectiveness of repetitive paravertebral injections with local anesthetics and steroids for the prevention of postherpetic neuralgia in patients with acute herpes zoster. Anesth Analg. 2009; 109(5):1651-1655.
4. Makharita MY, Amr YM, El-Bayoumy Y. Effect of early stellate ganglion blockade for facial pain from acute herpes zoster and incidence of postherpetic neuralgia. Pain Physician. 2012; 15(6):467-474.
5. Mohamed SA, Ahmed DG, Mohamad MF. Chemical neurolysis of the inferior hypogastric plexus for the treatment of cancer-related pelvic and perineal pain. Pain Res Manag. 2013; 18(5):249-252.
6. Moulin DE, Morley-Forster PK, Pirani Z et al. Intravenous lidocaine in the management of chronic peripheral neuropathic pain: a randomized-controlled trial. Can J Anaesth. 2019; 66(7):820-827.
7. Sangwan SS, Mittal R, Kundu ZS, et al. Prolapsed intervertebral disc with sciatica: the role of common peroneal nerve block. Trop Doct. 2005; 35(3):172-174.
8. Vancaillie T, Eggermont J, Armstrong G, et al. Response to pudendal nerve block in women with pudendal neuralgia. Pain Med. 2012; 13(4):596-603.
9. Vranken JH, Zuurmond WW, de Lange JJ. Continuous brachial plexus block as treatment for the Pancoast syndrome. Clin J Pain. 2000; 16(4):327-333.

Government Agency, Medical Society, and Other Authoritative Publications:

1. American Society of Anesthesiologists Task Force on Chronic Pain Management American Society of Regional Anesthesia and Pain Medicine. Practice guidelines for chronic pain management: an updated report by the American Society of Anesthesiologists Task Force on Chronic Pain Management and the American Society of Regional Anesthesia and Pain Medicine. Anesthesiology. 2010; 112(4):810-833.
2. Bril V, England J, Franklin GM, et al. Evidence-based guideline: Treatment of painful diabetic neuropathy: report of the American Academy of Neurology, the American Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation. Neurology. 2011; 76(20):1758-1765.

Websites for Additional Information

1. American Diabetes Association. Peripheral Neuropathy. Available at:https://diabetes.org/about-diabetes/complications/neuropathy/peripheral-neuropathy#:~:text=While%20keeping%20blood%20glucose%20levels,healthy%20and%20on%20managing%20pain. Accessed on January 15, 2024.
2. National Institutes of Health. Peripheral Neuropathy Fact Sheet. Available at:https://www.ninds.nih.gov/health-information/disorders/peripheral-neuropathy. Accessed on January 15, 2024.

Index

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

Document History

Status	Date	Action

Reviewed	02/15/2024	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Websites for Additional Information section.
Reviewed	02/16/2023	MPTAC review. Updated Websites for Additional Information section.
	12/28/2022	Updated Coding section with 01/01/2023 CPT changes; revised descriptors for 64415, 64417, 64447.
Reviewed	02/17/2022	MPTAC review. Updated Description/Scope, Rationale and References sections. Updated Coding section; removed 64999 NOC code for block no longer addressed.
Reviewed	05/13/2021	MPTAC review. Updated Description/Scope, Rationale and References sections. Updated Coding section; added 64999 NOC.
Reviewed	05/14/2020	MPTAC review. Updated Description/Scope, Rationale and References sections.
	12/31/2019	Updated Coding section with 01/01/2020 CPT changes; revised descriptors.
Reviewed	06/06/2019	MPTAC review. Description/Scope, Rationale, Background, Websites and Index sections updated.
Reviewed	11/08/2018	MPTAC review. Added note in Scope section regarding post-operative treatment.
Reviewed	01/25/2018	MPTAC review. The document header wording updated from “Current Effective Date” to “Publish Date.” Updated References section.
Reviewed	08/03/2017	MPTAC review. Updated Coding and References sections.
Reviewed	08/04/2016	MPTAC review. Updated Reference section.
	06/13/2016	Updated Coding section; removed diagnoses for other mononeuropathies.
	04/01/2016	Updated Description/Scope. Updated Coding section; removed diagnoses for carpal and tarsal tunnel syndromes.
Reviewed	11/05/2015	MPTAC review. Updated definitions section. Removed ICD-9 codes from Coding section.
New	05/07/2015	MPTAC review. Initial document development.

Applicable to Commercial HMO members in California: When a medical policy states a procedure or treatment is investigational, PMGs should not approve or deny the request. Instead, please fax the request to Anthem Blue Cross Grievance and Appeals at fax # 818-234-2767 or 818-234-3824. For questions, call G&A at 1-800-365-0609 and ask to speak with the Investigational Review Nurse.

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 eligibility for coverage. The member’s contract benefits in effect on the date that services are rendered must be used. Medical Policy, which addresses medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.