Anthem

Medical Policy

Subject: Radiofrequency and Pulsed Radiofrequency Treatment of Trigger Point Pain
Document #: SURG.00125
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Description/Scope

This document addresses the treatment of trigger point pain (also known as myofascial pain syndrome) with radiofrequency (RF) or pulsed radiofrequency (PRF). RF and PRF are procedures that apply high-frequency, alternating current to tissues via a probe inserted through the skin. This document does not address RF and PRF of non-myofascial tissue (for example, nerves and joints) or transcutaneous RF treatment techniques.

Note: Please see the following related document(s) for additional information:

- SURG.00096 Surgical and Ablative Treatments for Chronic Headaches
- CG-SURG-17 Trigger Point Injections

Position Statement

Investigational and Not Medically Necessary:

Radiofrequency (RF) and pulsed radiofrequency (PRF) treatment of trigger points are considered**investigational and not medically necessary.**

Rationale

To date, there is little evidence supporting the clinical utility of RF and PRF therapy in myofascial tissue. Most published literature on RF and PRF in trigger-point therapy are limited by small sample sizes, lack of a control group and the mechanism of therapeutic effect remains unknown.

Tamimi and colleagues (2009) reported the use of PRF for the treatment of myofascial trigger points and scar neuromas in 9 participants who were treated over an 18-month period. A total of 8 out of the 9 participants had a 75% to 100% reduction in their pain following PRF treatment at 4 weeks post-op. A total of 6 out of the 9 (67%) participants experienced 6 months to greater than 1 year of pain relief. The participants had no complications related to PRF. The authors concluded that PRF could be a treatment modality for myofascial trigger point pain; however, further studies and evaluation of this treatment approach are required.

In a case report (Lee 2011) a person with posterior cervical pain and headaches was described with a painful point in the posterior neck area. Nerve blocks guided by radiologic imaging were first performed; although the headaches improved after 5 days, the posterior neck pain continued. In contrast, following PRF treatment, the individual rated posterior neck pain as 0 on a scale of 0/10. The individual reported continued pain relief of headache and posterior neck pain during a 5-month follow-up. A caveat of this publication was that the participant's pain-relieving point differed from 'trigger point' pain and was thought to most likely reside in the subcutaneous tissue rather than myofascial tissue. The authors acknowledged that despite the shortcomings in this report the positive response seen in this case from PRF treatment in non-nervous tissue warrants further investigation.

Park and colleagues (2012) also published a case report on an individual with myofascial pain originating in the trapezius and the surrounding muscles. The individual was treated with multiple therapies that provided only transient pain relief. PRF was performed on both trapezius muscles. One week post-procedure, the individual reported significant pain relief, which was subsequently sustained for 3 months. The authors concluded that further research is needed to explain the sustained effect of PRF on myofascial tissue, as well as to demonstrate the efficacy of this treatment modality.

In a prospective case series, Niraj (2012) followed 12 participants with cervicothoracic or abdominal myofascial pain. All participants were non-responders to multiple treatments and ultimately received ultrasound-guided PRF. A total of 9 of the 12 participants (75%) reported 40% or better pain relief 6 months post-procedure. Similar to the aforementioned reports, the author concluded that randomized controlled trials are needed to establish efficacy and therapeutic mechanism of PRF.

In a prospective study, Niraj (2018) enrolled 120 study participants over a 3-year period, who were diagnosed with abdominal myofascial pain syndrome (AMPS). Study enrollees were included in a structured pain management pathway and prospectively audited for pain-related outcomes. The pathway began with medical management, which included a trial with amitriptyline, pregabalin, and tramadol. In the case of localized pain, 5% lidocaine plaster was prescribed along with a TENS machine trial and a course of acupuncture. If participants' pain returned to baseline within 3 months, they were moved along in the pathway to the second treatment modality, trigger point injection with a local anesthetic agent. If injection with local anesthetic failed (no improvement at 3 months) then trigger point injections were attempted with a depot steroid added to the local anesthetic. Finally, if the aforementioned pain management techniques failed to provide pain relief for at least 3 months, enrollees were offered PRF of the trigger points. In total, 43 participants received PRF, 12 (28%) did not respond to treatment, 5 (12%) responded but the responses were not sustained, and 26 (60%) experienced a durable response (relief lasting more than 6 months). There was improvement reported in pain intensity scores, quality of life, anxiety and depression scores in the 26 participants who received PRF and had a durable response. There were 9 reported PRF complications (flare-up lasting at least 1 week). While this study was designed to evaluate the use of a pain management pathway to treat AMPS, it provides evidence that PRF as a treatment option may hold promise for this pain syndrome. Further study, in the setting of a randomized controlled trial, may provide further evidence of PRF as an effective and durable treatment option for AMPS.

In 2019, Diego and colleagues published a prospective, randomized, double-blind, and placebo-controlled trial that investigated the feasibility of radiofrequency in individuals with myofascial chronic neck pain. A total of 24 individuals were included in the study with 14 of those individuals randomly assigned to the radiofrequency group and 10 individuals randomly assigned to the control group. Radiofrequency was delivered to the treatment group for 12 minutes, 2 times per week over 4 weeks totaling 8 sessions. The control group received sham treatment for the same amount of time using the same device without an energy source. Outcomes that were assessed were reduction of neck pain intensity at myofascial trigger points using the visual analog scale (VAS), improvement in cervical range of motion (CROM) using a CROM measurement device, and reduction in neck disability using the neck disability index

(NDI). The evaluator that recorded the pre- and post-treatment measurements was blind to treatment allocation. The results showed a significant difference between baseline VAS versus all measurement periods in the radiofrequency group ($p<0.001$), but not in the control group ($p>0.05$). The NDI significantly improved in both groups ($p<0.05$), but there was not a significant difference when comparing results between groups ($p=0.254$). There was no difference between the two groups for time in all CROM. The results of this study showed that in individuals with myofascial chronic neck pain, there is no significant difference between radiofrequency and sham treatment.

Background/Overview

Muscle injury or repetitive muscle stress may lead to the development of trigger points. Trigger point pain most often occurs in the muscles that maintain body posture such as the neck, shoulder and pelvic girdle. This results in regional, persistent pain and decreased range of motion in the affected muscles. Physical examination may reveal a nodule of muscle fiber. Palpation of this nodule may produce pain over the trigger point or cause the pain to radiate to another area with a local twitch response (Alvarez, 2002).

Treatments for trigger point pain vary. Initially, conservative management such as activity modification in combination with oral medication, such as analgesics, steroids and muscle relaxants, may provide pain relief. Physical and chiropractic therapy are often utilized to increase range of motion (Alvarez, 2002). Injections of anesthetics, with or without steroids, have been used to provide pain relief when conservative therapy is unsuccessful (Alvarez, 2002; Niraj, 2012).

RF and PRF are procedures used to treat affected tissues using a high-frequency alternating current. RF energy in the form of continuous heat is transmitted to the tip of a needle probe which is inserted through the skin, often guided by x-ray or ultrasound to ablate targeted tissues. PRF differs from RF, in that PRF uses pulsed heat energy, allowing tissue cooling between energy pulses. It is theorized, that pulsed energy eliminates the potential for ablation of tissue and that it is the exposure to a rapidly changing electrical field alone, not tissue ablation, which induces sufficient cellular change to provide a therapeutic effect (Byrd, 2008).

Definitions

Ablation: The destruction or removal of tissue.

Focal pain: Pain that is easily identified as being specific to a single location.

Myofascia: The fibrous tissue that encloses and separates layers of muscles.

Nodule: A small solid collection of tissue.

Trigger points: Hyperirritable areas in the skeletal muscle that are associated with palpable nodules in taut bands of muscle fibers; stimulation or compression may elicit local tenderness, referred pain, or a local twitch response.

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:
When the code describes a procedure indicated in the Position Statement section as investigational and not medically necessary.

CPT

20999	Unlisted procedure, musculoskeletal system, general [when specified as radiofrequency or pulsed radiofrequency treatment of trigger points]

ICD-10 Diagnosis

	All diagnoses

References

Peer Reviewed Publications:

1. Alvarez DJ, Rockwell PG. Trigger points: diagnosis and management. Am Fam Physician. 2002; 65(4):653-660.
2. Byrd D, Mackey S. Pulsed radiofrequency for chronic pain. Curr Pain Headache Rep. 2008; 12(1):37-41.
3. Diego IMA, Fernández-Carnero J, Val SL, et al. Analgesic effects of a capacitive-resistive monopolar radiofrequency in patients with myofascial chronic neck pain: a pilot randomized controlled trial. Rev Assoc Med Bras (1992). 2019; 65(2):156-164.
4. Diep D, Chen KJQ, Kumbhare D. Ultrasound-guided interventional procedures for myofascial trigger points: a systematic review. Reg Anesth Pain Med. 2021; 46(1):73-80.
5. Lee J, Yoon K, Kim K, Mi Yoon D. Pulsed radiofrequency treatment of pain relieving point in a soft tissue. Korean J Pain. 2011; 24(1):57-60.
6. Niraj G. Pathophysiology and Management of Abdominal Myofascial Pain Syndrome (AMPS): a three-year prospective audit of a management pathway in 120 patients. Pain Med. 2018; 19(11):2256-2266.
7. Niraj G. Ultrasound-guided pulsed radiofrequency treatment of myofascial pain syndrome: a case series. Br J Anaesth. 2012; 109(4):645-646.
8. Park C, Lee Y, Kim Y, et al. Treatment experience of pulsed radiofrequency under ultrasound guided to the trapezius muscle at myofascial pain syndrome. Korean J Pain. 2012; 25(1):52-54.
9. Tamimi MA, McCeney MH, Krutsch J. A case series of pulsed radiofrequency treatment of myofascial trigger points and scar neuromas. Pain Med. 2009; 10(6):1140-1143.

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	05/11/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Rationale section.
Reviewed	05/12/2022	MPTAC review.
Reviewed	05/13/2021	MPTAC review. Updated References section.
Reviewed	05/14/2020	MPTAC review. Updated References section.
Reviewed	06/06/2019	MPTAC review. Updated Description, Rationale and References sections.
Reviewed	07/26/2018	MPTAC review. Updated header language from “Current Effective Date” to “Publish Date.” Updated Rationale and References sections.
Reviewed	08/03/2017	MPTAC review. Updated References section.
Reviewed	08/04/2016	MPTAC review. Updated Rationale and References sections. Removed ICD-9 codes from Coding section.
Reviewed	08/06/2015	MPTAC review. Updated Rationale and References sections.
Revised	08/14/2014	MPTAC review. Revised Title, and Investigational and Not Medically Necessary statement with the removal of “ablation”. Updated Description, Rationale, Background, References, and Index sections.
Reviewed	08/08/2013	MPTAC review. Updated Description, Rationale, and Background sections.
Reviewed	08/09/2012	MPTAC review. Rationale and References updated.
New	08/18/2011	MPTAC review. Initial policy 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.