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PENS: A NEW TECHNIQUE TO MANAGE PAIN

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ABSTRACT

The term "mixed pain "is increasingly applied to specific clinical scenarios. There are several options for controlling certain type of chronic pain without the use of medication or surgery, interfering with the delivery of pain signals to the brain can be an effective pain management strategy, without the use of narcotics or other medications. A mini-invasive option is Percutaneous Electrical Nerve Stimulation (PENS), it is a neuromodulation technique designed to manage a range of chronic peripheral neuropathic pain including areas of hypersensitivity, various types of headaches, low back pain and chronic post-surgical pains. Although PENS showed to be effective in reducing unspecified pain in several chronic pain conditions, there is still a lack of evidence in the management of neuropathic or mixed pain not responsive to pharmacological treatments. Therefore, in the present article we portray the potential effects of PENS in the multidisciplinary and multidimensional management of mixed chronic pain in patients with musculoskeletal disorders.

KEYWORDS: PENS therapy, Electroanalgesia.

INTRODUCTION

Pain is highly unpleasant physical sensation caused by illness or injury. In this scenario, the term mixed pain has been recently introduced in order to describe conditions characterized by nociceptive, neuropathic and nociplastic pain.

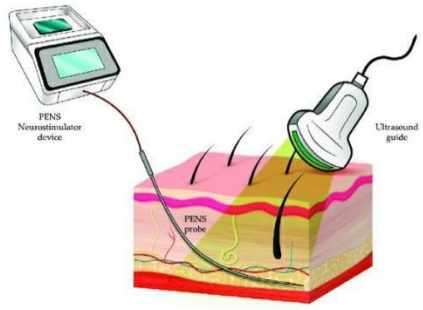
PENS is an exciting development in the control of pain for people with peripheral nerve pain. Patients are showing clear indications that peripheral nerve pain can be eased using the PENS system, despite the fact that it is a recent innovation. PENS uses as a percutaneous electrode array to facilitate the delivery of therapeutic electrical signals through the skin, bypassing the local skin resistance, directly or in close proximity, to the nerve endings located in soft tissues or muscle.

PENS therapy does not destroy the affected nerves but makes them less sensitive to pain. A low voltage electrical current is delivered through a specially designed needle to the fatty layer just below the surface of the skin close to the specific nerve, or to the nerve endings situated in the local area. This stimulation is intended to induce a pain-relieving effect by altering the state of the nerves.

Procedure

The PENS procedure is a unique, minimally invasive, totally reversible, and painless procedure. Treatment involves electrical stimulation targeting nervous tissue. The treatment is very effective, providing medication-free pain relief. PENS therapy is performed under sterile conditions in an operating theatre using mild sedation and local anesthetics. PENS Probe is selected from lengths 20mm-200mm to ensure the best fit coverage of the painful area. one or two thin probes (long needles) will be inserted under the skin either near the affected nerve or in the fatty layer underneath the painful area. Ultrasound may be used to confirm the correct placement of appropriate electrically conductive. Sometimes, it may be necessary to make a tiny incision to place the needle. Pain-relieving effects of PEN therapy last in excess of 3 months.

Electrical stimulation is then delivered to the affected area through the probes. This stimulation lasts for 25 minutes. During treatment the patient may feel a slight tingling sensation around the treatment area, sometimes the patient may not feel anything at all. When the treatment is complete, the probes will be removed and a small sterile dressing Is placed over the probe insertion sites for 24 hours. The patient will be allowed to go home after the procedure is done. They can eat and drink normally.



The PENS probe tunneled percutaneously at the subcutaneous level through an ultrasound guide.

Mechanism

PENS therapy delivers low-voltage electrical current to the fatty tissue just below the skin, in the vicinity of a specific nerve, or to the local area. This electrical stimulation alters the state of the nerves, inducing a pain-relieving relief that may be immediate or it may take a few days before there is any noticeable difference in pain levels.

Parameters

The frequency between 2 and 4Hz with high intensity is commonly used in nociceptive pain and conditions that may result in the release of endorphins and enkephalins. For neuropathic pain, it is recommended to use currents with a frequency between 80-100Hz.

Advantages

- Total pain relief
- Minimally invasive
- Better quality of life
- Less pain because smaller gauge needle
- Safe and effective

Disadvantages

- Pain at treatment location
- Bleeding at treatment location
- Damage to nerve or infection

Side effects

They may be some local bruising and tenderness at the probe insertion site. There is a very small risk of infection and nerve damage.

Contraindications

The contraindications of PENS systems are minimal. As with any other procedure, PENS should not be used by patients who have epilepsy, heart disease, pregnant women, or children. Patients taking blood -thinning medication should also avoid PENS treatment.

CONCLUSION

PENS therapy is a relatively new, low-risk, and low-cost solution to chronic pain management, With PENS therapy, the risk of side effects is generally low and the potential benefits for pain relief often outweigh these risks. If we try other pain management techniques there is a possibility of failed results, or you may worry about the side effects of today's medications, then PENS therapy is an ultimate alternative technique.

The beauty of PENS is that it is a drug-free way to control the pain.

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