

**RADIO-FREQUENCY ABLATION OF PERIPHERAL NERVES:
A NON-SURGICAL TREATMENT FOR CHRONIC HEEL PAIN AND NEUROMAS**

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Recalcitrant heel pain and neuromas that have not responded to conservative measures have traditionally been treated with surgical intervention. Now the pain associated with these common conditions can be eliminated through Radiofrequency (RF) ablation of the sensory nerves causing the pain. NeuroTherm Inc. (www.neurotherm.com) has introduced a user friendly radiofrequency (RF) unit designed specifically for Podiatrists. If treatment of the pathology and inflammatory response associated with these conditions fails, then the transmission of pain signals can be blocked and the patients become asymptomatic. The procedure is highly effective and reimbursable with an established CPT code 64640.

Radiofrequency (RF) has been used to treat chronic back pain and trigeminal neuralgia for over forty years. This same principal can now be utilized by Podiatrists to treat chronic heel pain and neuromas through a fifteen minute procedure in their office or surgical suite. Patients are immediately ambulatory following the procedure and are being placed back into their athletic sneakers. Patients have little to no discomfort following the procedure and there have been no significant complications associated with the procedure. Ablation of the nerve is achieved by the radiofrequency waves generating a 5mm sphere of heat around the tip of an electrode housed in an insulated 22 gauge needle. The heat partially damages the nerve and stops pain transmission.

The procedure is performed with the patient seated or supine. Lidocaine is used to raise a wheal at the medial or plantar aspect of the heel where the plantar fascia attaches to the medial Calcaneal tuberosity (basically the same location that a medial or plantar heel spur injection is given). A 22 gauge insulated PodiaTherm needle with a 5mm active tip is then inserted through the wheal to the superior margin of the plantar fascia at its attachment to the calcaneus. The Inferior Calcaneal nerve and its posterior branch wrap around the tuberosity at this level just superior to the ligament innervating the periosteum and the proximal plantar fascia. The PodiaTherm radiofrequency (RF) generator electrode is then inserted into the 22 gauge needle and the unit is set to stimulate sensory nerves. The power is then gradually turned up until the nerve is stimulated and the patient can feel mild discomfort at the plantar medial heel where they have been experiencing their heel pain. This assures that you have localized the nerve that is causing their heel pain. If pain is not elicited after .5 volts of power has been reached then the needle and electrode are too far from the nerve and the needle needs to be repositioned. After the nerve is located the unit is set to stimulate motor nerves. Power is gradually increased to 2.5 volts and the foot and digits are monitored for fasciculations, which would indicate that a motor nerve was localized. If a motor nerve is located then the needle needs to be repositioned and sensory and motor function checked again to insure that a motor nerve is not ablated. The PodiaTherm generator is then switched to lesion the nerve and the temperature is set to 80 or 90 degrees Celsius and the power is increased. The PodiaTherm generator self regulates the power output making it

impossible to over heat the target nerve or surrounding tissue. The unit runs for a set amount of time of 90 seconds and then shuts the power down.

The procedure is then repeated with the needle repositioned just distal and just proximal to the original site. This is done to assure that both the Inferior Calcaneal nerve and its posterior branch are ablated at a proximal enough level to stop pain transmission from the area of chief complaint.

A postoperative injection of cortico-steroid is given to reduce inflammation from the procedure and the anesthetic block. The procedure sites are dressed with a band-aid over the injection and ablation sites. Patients are instructed to use their athletic sneakers whenever ambulating and are evaluated the following week.

For treatment of neuromas the technique to ablate the nerve is identical. The nerve is approached with the 22 gauge Podiatherm needle with a 5mm active tip from the dorsal aspect of the foot mimicking the procedure for a typical neuroma injection. The nerve is stimulated and motor function is tested in the same manner. A second ablation is usually performed proximal to the first to assure ablation proximal to the neuroma and digital bifurcation.

Radiofrequency (RF) ablation is an extremely effective method for treating heel pain and neuromas that have not responded to traditional conservative measures. It provides a unique non-invasive reimbursable modality which usually prevents surgery in the treatment continuum of heel pain and neuromas. With the development of a small portable radiofrequency generator, this procedure can now be easily performed in the office under local anesthetic. With minimal discomfort and virtually no significant complications patients are back in sneakers the same day and return to normal activity very quickly. Radiofrequency provides doctors and patients with a simple effective alternative to surgical intervention and its possible complications.

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