

# Cedar Grove

## Foot & Ankle Specialists

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### **Radiofrequency Nerve Ablation for Chronic Heel Pain**

#### **Targeting Nerves In The Plantar Fascia**

Although plantar fasciitis is widely believed to result from inflammation of the medial and central portions of the plantar fascia at the origin from the calcaneus, researchers have suggested other mechanisms. Authors have cited nerve entrapments, stress fractures, calcaneal bursitis and a variety of other causes for heel pain. In fact, Lemont and co-authors have proposed the term plantar fasciosis to describe the cluster of problems that can cause heel pain.

Although the etiology is potentially multifactorial, the nerve that transmits the pain remains consistent for most types of heel pain. The posterior and anterior branches of the inferior calcaneal nerve provide sensory innervation to the area where the plantar fascia originates from the calcaneus. The medial calcaneal nerve provides sensory innervation to the more medial aspects of the heel as well as the calcaneal bursa regions. Ablation of these nerves can reduce the deep heel pain associated with each of these areas.

#### **About Radiofrequency nerve ablation**

Radiofrequency nerve ablation uses radiofrequency energy to create heat in a very small area in order to disrupt the myelin sheath on the surface of sensory nerves. The application of heat at 80° to 90°C for 90 seconds results in gaps in the sheath, thereby stopping conduction of the nerve. Using radiofrequency nerve ablation, one can easily control pain associated with plantar fasciitis by eliminating the sensory perception of inflammation in the heel. In fact, this technology is effective at reducing or eliminating pain from a variety of etiologies associated with heel pain, including nerve entrapments, scars from open plantar fascial releases, calcaneal bursitis and, of course, plantar fasciitis.

As with all unfamiliar technologies, there is a certain level of understanding needed in order to demystify the treatment process. In reality, radiofrequency technology has been available for quite some time. Microwave ovens are based on this technology on a much larger scale and many electrocautery devices used in the operating room use radiofrequency to generate heat. Radiofrequency nerve ablation differs from these much simpler devices in the ability to regulate the heat administered. In addition, the device discussed here uses a simple nerve stimulator to localize the placement of the electrode adjacent to the target nerve and differentiate sensory from motor nerves. Accordingly, clinicians can be certain they are only treating the targeted nerve.

Radiofrequency nerve ablation technology was first described in 1968 and has been in widespread use for pain management since the 1980s. Physicians specializing in chronic pain management have been using this technology successfully to disrupt conduction to nerves as they exit the spine. For example, in cases in which sensory nerves are being pinched by compressed vertebrae, nerve ablation can halt chronic pain. Similarly, ablation of the nerve can control hyperstimulated cardiac tissue. This can result in a more regular heartbeat by eliminating ectopic stimulation.

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