

## Stopping the Pain Signal – Radiofrequency Neurotomy Eases Facet-Related Back Pain

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Approximately 90% of low back pain is self-limited and will resolve on its own in less than six weeks. However, when pain does not appear to be self-limited, we are able to help many patients with minimally invasive techniques that relieve pain and avoid surgery.

Our focus is on developing safe and effective treatment plans that improve our patient's function and quality of life. We strive to treat patients with the least invasive treatment possible. Radiofrequency neurotomy is one such technique we use on well-selected patients to relieve their low back pain that we determine is due to pain and/or arthritis of the zygapophyseal joints of the back.

Zygapophyseal joints, commonly known as facet joints, are small joints in the posterior aspect of the spine that frequently (15% to 20% of the time) cause low back pain that does not spontaneously resolve after six weeks.

There are two facet joints that work to guide the motion of the spine at each vertebral level. When these joints, which are susceptible to arthritis, begin to "wear out," they can cause pain with motion and at rest.

The facet joints send pain signals via small nerves that can be selectively treated with radiofrequency neurotomy, effectively "cutting the signal" of pain without surgery. Radiofrequency neurotomy is a medically proven treatment to give long-standing pain relief to patients who have long-standing back pain.

### **Pinpointing the Cause**

While strains to muscles and ligaments as well as herniated discs are common sources of low back pain, there are many other conditions that can also cause it. Our goal is to first establish a firm diagnosis for pain that does not resolve spontaneously.

Through the use of physical examination, a careful history, as well as advanced imaging such as a magnetic resonance imaging (MRI) and other physiologic testing, we are able to determine the source of a patient's low back pain.

Only when the cause of the pain is pinpointed can we establish a well-designed treatment plan. If facet joint pain is the cause of a patient's low back symptoms, then radiofrequency neurotomy may provide pain relief without surgery.

## How It Works

Radiofrequency neurotomy treats the nerves that carry pain signals from the facet joints of the vertebral column. The nerves' main function is to carry sensory signals from the facet joints, but they do not carry nerve pathways to or from the legs.

Radiofrequency neurotomy works by making a lesion with heat and removing the nerves' ability to carry pain signals. The nerve is treated with a small needle designed to monitor the lesion while it is created for safety and efficacy.



## Positive Results

Writing in the peer-reviewed journal *Spine* in 2000 (volume 25, pages 1270-1277), Paul Dreyfuss, MD, et al. reported on results of using radiofrequency neurotomy to treat chronic pain in the lumbar zygapophyseal joint. One year after the procedure, 87% of the patients reported significant pain relief.

Guided by the positive results reported in this medical literature, we incorporated radiofrequency neurotomy to treat pain originating from the facet joints into our practice. Overall, our patients are doing exceptionally well with this exciting minimally invasive alternative to surgery.

## Necessary Screenings

The nerves subject to the treatment are extremely minute. For the most part, they are sensory, which means they only carry information away from the parts of the body they serve, such as ligaments, skin, or joints. We recommend radiofrequency neurotomy only to patients who meet strict criteria. All patients who are considered candidates to undergo the procedure are carefully screened.

We ensure patients meet two fundamental criteria before proceeding with the recommendation to perform radiofrequency neurotomy for low back pain. First, patients should give their pain time to spontaneously resolve, and thus, we usually wait four to six months from symptom onset before considering the procedure.

Secondly, the candidate must have experienced short-term relief with previous diagnostic injections that anesthetized the nerves that are under consideration for treatment with radiofrequency neurotomy. We tell patients that if carefully numbing the nerve with x-ray guidance results in at least short-term relief, only then can we expect that "permanently numbing" the nerve with radiofrequency neurotomy will most likely provide long-term relief.

As with any medical procedure, it is imperative the patient feels free to talk openly with his or her physician. We need to know which medications a patient is taking, allergy history, and other factors in order to perform a careful screening to determine whether a patient is a candidate for radiofrequency neurotomy.

## Undergoing the Procedure

Patients who are candidates for radiofrequency neurotomy can expect to limit their activities on the days of their procedures, allowing symptoms to act as their guides to how quickly they can resume their normal routines. They may experience some soreness for three to four days after the procedure.

The procedure itself takes between 30 and 90 minutes and is performed in a surgery center where the patient can be carefully monitored. During the entire procedure, the patient is awake but can take medications (which many times are not even needed) to make the procedure as close to pain free as possible.

The radiofrequency needles are placed with x-ray guidance. Once the needle is in the correct location based on x-ray assistance, further physiologic testing is also performed to ensure patient safety, which is our utmost concern. Once the needle is correctly placed and the affected area is fully numb, a radiofrequency lesion is then painlessly made for the patient's relief.

Maximum pain relief isn't often fully realized until a few weeks following the procedure because the nerves treated with radiofrequency waves do not immediately lose all abilities to transmit impulses. Effective radiofrequency neurotomy provides pain relief for greater than one year in most cases.

## Effective Pain Management

Pain management and treatment is a serious matter. Managing pain directly improves quality of life, making physical activity pain free and enabling individuals to undertake more activities.

We both have a long-standing interest in identifying minimally invasive ways to provide patients with significantly beneficial and long-term pain control. We believe that for candidates who meet strict criteria, radiofrequency neurotomy does both.