

Neurostimulation offers option for chronic pain

BY LAUREN RATCLIFFE
lratcliffe@scbiznews.com

Edward Carlton used to be an avid runner, but pain in his back has rendered him unable to do the most basic of tasks. Until recently he could not even chase his 5-year-old son Jayden around the block.

EXECUTIVE SUMMARY

A pain management system that intercepts messages to the brain offers help to chronic pain sufferers, but not everyone qualifies for the trial.

On March 29, Carlton received his first glimpse of relief when he underwent a trial for a neurostimulator inserted in his spine.

The weeklong trial is conducted through a joint effort between Pain Specialists of Charleston and St. Jude Medical.

"It was the first time in five years where I didn't have pain in my

leg," he said.

Carlton has had six back surgeries and receives cortisone injections three times each year, but on May 2, he'll undergo permanent insertion of a neurostimulator.

Carlton estimated that the weeklong trial provided 80% relief from his pain, and he expects as good or better results from his permanent device.

Old idea, new technology

Neurostimulation is a relatively new technology involving the insertion of electrical leads into the spinal column.

A battery-powered generator, similar to a pacemaker, sends electrical charges through the leads, which intercepts the pain signals to the brain.

"It's revolutionary," Dr. Edward Tavel of Pain Specialists said.

Tavel performs roughly seven trials per month, and he carefully screens potential recipients beforehand.

Patients who receive the device find very few limitations on their quality of life afterward: they can't get an MRI, but that's about it, Tavel said.

With the device, patients can do everything from scuba and skydiving to walks on the beach and cycling.

"I've been doing this for years, and so many lives have changed," Tavel said.

The technology, in theory, has been around the 1960s, but long-term usage of the implanted devices has only been going on for about a decade.

Erica Degroff said the concept of neurostimulation is similar to rubbing an elbow after bumping the funny bone. The rubbing overrides the pain signal.

Neurostimulators work the same way, and although they were approved by the Food and Drug Administration, a one-week trial with the device is performed to ensure patients can handle the device permanently.

The stimulator replaces pain with a "buzzing" sensation. Erica Degroff, spokeswoman for Pain Specialists of Charleston, said each patient responds differently, but that in most



Edward Carlton has chronic pain and hopes a neurostimulator will keep him playing with Jayden, his 5-year-old son. (Photo/Leslie Burden)

cases, a tingling is felt in the area where pain once existed. Some patients can't handle the constant buzzing, she said.

Still, Tavel screens patients before performing the trial and 80-90% of patients who undergo the trial receive a permanent device. Nationally, the average is 50-60%.

Candidates for the new device are people who've likely had multiple back surgeries or have non-arthritic, constant or pulsing pain in their legs, hips, beltline, back or shoulders. Referrals who fit those pain criteria are considered for treatment.

The process

Before receiving a trial device, patients must be evaluated by a pain specialist and a neuropsychologist.

Tavel said adhering to a process helps ensure that patients who undergo the trial are likely to achieve relief from their pain.

"The right way (to go about the treatment) is the way we do it here," he said. "(Patients) see me, we send them to a psychologist ... they have to be cleared by the psychologist and then we do the trial."

Dr. Sheldon Levin, a neuropsychologist, said he evaluates patients using an hour-long interview and a series of tests and reports.

"It's necessary to really understand what the patient is going through," Levin said. "Coming in one time, if you don't spend time, you are going to miss a lot of important information."

Levin said he looks to evaluate whether the patient can handle the surgery, if they are depressed, addicted to narcotics or whether their expectations for treatment are realistic. He said many patients can present with varying degrees of depression and dependency on pain medicines as a result of high levels of chronic pain — having those characteristics doesn't automatically disqualify a candidate.

"The purpose of the trial is to determine if the device will give the patient pain relief," Levin said. "If the patient is not psychologically ready, the outcome will either fail or will

not be optimal."

If Levin approves a candidate, he or she will undergo a test of the stimulator. During the trial, the leads are inserted through an epidural needle while the patient is awake and under local anesthetic, adjustments to the placement of the leads within the spinal column ensure the part of the body in pain is covered by the electrical signals.

The weeklong test allows the patient to adjust controls and consider whether a permanent device is desirable.

Once the trial period is finished, a surgery to implant the permanent stimulator and battery is scheduled. The surgery takes about 45 minutes and a paddle-shaped lead is inserted providing more stability in placement.

"It can change somebody's life," said Dr. Sabino D'Agostino, a neurosurgeon who regularly implants the devices. "The goal is to get them back to a normal life."

The little things

Normalcy is all Carlton wants. As a flight attendant for US Airways, he said he wants to return to a full work schedule and enjoy his time at home.

While the long-term effects of the stimulators are still unknown, Carlton said he's not concerned about any future troubles the device may create.

"When your quality of life has decreased so much, I think you would do just about anything," he said. "I don't think (the device) could hurt me in the long run as much as I'm hurting now."

By the end of May, barring any complications, Carlton said he expects he'll be back to living a normal life.

"I'd love to go bicycle riding with my son more than just around the block," he said. "With a 5-year-old, I'd like to be able to do the things that a father should." ■

Reach Lauren Ratcliffe at 843.849.3119