

Radiofrequency Procedure Stuns Nerves, Relieves Chronic Neck Pain Longer

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The pain was so bad he couldn't turn his head. For two years, he couldn't drive or wander around his yard or even sleep. Worst of all, William Tuten couldn't go out on his boat — a hobby he's so fond of that his wife has a sign: "He's not here, he's fishing."

In March, Tuten was the first patient to undergo a new nonsurgical procedure now being offered at the University of Florida Health Spine & Sports Intervention Center, located at UF Health Shands Rehab Hospital. William S. Jacobs, M.D., the co-chief of pain in the UF department of psychiatry, used Cervicool, a water-cooled radiofrequency system by Kimberly-Clark Corp., to treat the facet joints in Tuten's neck.

"The result is immediate," Tuten said. "You lose the pain before you leave the building."

Cervical facet joints connect the bones in the upper spine, acting as hinges that allow bending and twisting. When inflamed because of trauma or arthritis, they can cause chronic pain.

"Acute pain gets you out of trouble," said Jacobs, who is board-certified in anesthesiology, addiction medicine and pain medicine. "You put your hand on a hot stove, you move your hand. But chronic pain doesn't really serve a great purpose. You have pain that hurts all the time, every day, and when you start to realize it's never really going to go away — then it starts to eat at people."

Many people with this type of neck pain turn to surgery for relief. However, for patients like Tuten, surgery is considered too risky because of age or preexisting medical conditions. Orthopedic surgeons told the 63-year-old that his arthritis was so extensive that it would require multiple dangerous surgeries to fix it.

Enter radiofrequency treatment. This interventional pain procedure doesn't fix the arthritis or other medical issues, but it does block the pain for six to 12 months.

The first step is determining which cervical facet joints are actually causing the pain. Typically, Jacobs targets the three likeliest joints along one side of the spine, although many patients return to get the other side done once they've recovered, he said.

The actual procedure involves inserting a 6-inch needle next to the nerve of the offending cervical facet joint. The needle connects to a machine that sends radiofrequency energy down through the tip, thereby heating the needle and the

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nerve it's touching. Absorbing the heat energy effectively stuns the nerve, blocking the pain signal to the brain.

"It feels like someone is pinching you a little bit," said Tuten, who, like most patients, only required a local anesthetic during the procedure.

These injections don't destroy the nerve, since doing so would cause the nerve to grow back without its normal structure, usually resulting in a bundle of nerves that cause more pain than the original inflammation.

The entire process takes approximately 40 minutes to complete; however, Jacobs and his team prep as they would for minor surgery. It's still a technical procedure — hitting the wrong area could paralyze an arm or damage a blood vessel, which is why X-ray imaging guides each step. They've even treated patients with pacemakers; a particular challenge since the radiofrequency energy could potentially reprogram the devices, said Jacobs, an associate professor of psychiatry.

But this technology, which has served as an alternative to surgery and painkillers for approximately 15 years, is becoming more precise. Released in February, Cervicool is the first water-cooled radiofrequency system on the market — meaning it uses water circulation to cool the tubes connected to the needle. This allows for better control, not only when targeting the nerve, but also for controlling the temperature of the needle, Jacobs said.

"Cooled radiofrequency gives us gives us a perfectly round treatment area, so you consistently know where you're treating," Jacobs said. "It also treats a bigger area at a lower temperature, so you can have it on the nerve for almost twice as long. It's more effective for your patient, and will probably last longer."

Jacobs was one of approximately 12 Florida doctors who went to Tampa in February to receive additional training from the Cervicool developers. Since then, he's treated 10 patients with the new technology and each one has walked out saying that the pain is gone, Jacobs said.

"I'm so thankful that they came up with this procedure," Tuten said. "You know you still got a problem there, but it's tolerable and you can live with it. It gives people like myself a quality of life that we wouldn't have otherwise."

On his first time out fishing since the procedure, Tuten didn't catch anything.

"But," he said, "I was in the boat."

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