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putting
• the
pieces
together

for people with trigeminal neuralgia, relief can be elusive, but it's not impossible

Imagine a condition so painful and so baffling that many patients suffer through multiple tooth extractions before they recognize the true origin of their problem.

J. Adair Prall, M.D., a neurosurgeon and the director of neurosurgery at Littleton Adventist Hospital, is one of only two doctors in the Denver area who specializes in this rare, often misdiagnosed condition, called trigeminal neuralgia (TN).

"I often see people after they've had teeth pulled. It's a tragic aspect of the disease," says Prall. "Patients and their doctors don't recognize it for what it is."

TN, also called "tic douloureux," is a chronic pain condition that affects 1 percent of the population, according to Prall. It's widely believed

that TN is caused by a blood vessel pressing on the trigeminal nerve as it exits the brainstem. This pressure sends abnormal signals to the brain, shooting sudden, severe shocklike pains through the side of the jaw or cheek.

desperate for a diagnosis

"I thought it was the onset of a root canal," says Mark Bentz, 52, of Littleton. "But after my dentist examined my teeth, he said, 'I bet you're the first patient I've ever had who wished he needed a root canal.'"

Bentz and his wife searched the Web and quickly put the pieces of the puzzle together. Of course, putting a name to his pain didn't stop it. "It felt like a meat cleaver smacking into the right side of my face ... a meat cleaver with a battery hooked up to it," says Bentz. "There's a reason they call it the suicide disease," he adds.



Lori Carlson, medical assistant, and J. Adair Prall, M.D.

Unlike many chronic pain conditions, narcotics don't work for TN patients. Instead, many find relief in anticonvulsant medications because the mechanism used to block seizures also short-circuits the pain signal from the trigeminal nerve.


Bentz's neurologist put him on a heavy regimen of antiseizure medications, but the side effects soon outweighed the benefits. "All I wanted to do was sleep and I couldn't function on the phone at work anymore," he says.

a surgical solution

Fortunately, Bentz was referred to Prall, the only doctor on the Front Range who performs all three of the most common surgical options for TN—microvascular decompression (MVD), radiosurgery (Gamma Knife or CyberKnife) and percutaneous radiofrequency rhizotomy (PRR). Each surgery has benefits and drawbacks (see sidebar).

Bentz chose Gamma Knife surgery, which uses focused radiation. He says the hardest part of the surgery was having a frame that resembled a football helmet screwed to his head. After that, he was bombarded with invisible gamma rays for 54 minutes, about the length of the CD he listened to during the procedure.

Bentz returned to work the day after surgery—pain-free. "I chose Gamma Knife because I have a Midwest work ethic and I didn't want to be out of work," he says. "I like to give 110 percent in spite of it all."

Bentz says he couldn't be happier with his surgery, Prall and the staff at Littleton Adventist Hospital. "They explained everything in detail and laughed at all of my jokes," he says. So how is Bentz feeling now? "I'm doing great. It's such a relief," he says. "I can't play the piano—but, then again, I never could." 

surgical options

The three most common surgical options for trigeminal neuralgia are microvascular decompression (MVD), radiosurgery (Gamma Knife or CyberKnife), and percutaneous radiofrequency rhizotomy (PRR). Patients can elect to undergo (or repeat) any of these surgeries in any order. Each of the procedures has a recurrence rate of 15 to 20 percent.

Microvascular decompression (MVD) is a major surgery performed under general anesthesia through an incision behind the ear. Using a microscope, the surgeon implants a small Teflon felt pad between the blood vessels and the trigeminal nerve to alleviate the pressure and resulting pain signals.

MVD offers immediate relief with a 90 to 95 percent success rate and near-zero chance of complications (there is an extremely small chance of facial numbness). On the downside, MVD is the most invasive of all TN surgeries, with a two-day recovery period and a two-week period to regain presurgery energy levels.

Radiosurgery (Gamma Knife) is outpatient surgery performed with local anesthesia. The surgeon uses focused radiation to intentionally damage or short-circuit the trigeminal nerve (despite its name, no knives are used).

Radiosurgery offers an 80 percent success rate with virtually no recovery time. It's also the easiest on the patient. Downsides include a potential delay in improvement of days to weeks, occasional pain breakthrough and a 2 to 5 percent chance of facial numbness.

Percutaneous radiofrequency rhizotomy (PRR) is an outpatient surgery performed while the patient is consciously sedated. Guided by an X-ray, the surgeon inserts a thin needle through the patient's cheek. An electrode at the end of the needle is then heated and used to burn the trigeminal nerve. Damaging the nerve numbs the pain signal. PRR offers immediate relief and a 90 to 95 percent success rate.

Downsides include facial numbness, with a 1 percent chance of severe painful numbness (anesthesia dolorosa). There's also a slight chance of loss of sensation to the cornea, making it easier for patients to unintentionally scratch an eye. Of all three procedures, PRR can be the most uncomfortable for a patient to undergo.