

Awake Brain Surgery Sets Pace for Parkinson's Treatment

We don't normally think about the ability to button a shirt, drink a cup of coffee and get out of a chair. But we should.

More than seven million people worldwide can't do those or other everyday things because of illnesses like Parkinson's Disease. But a little-known surgery can help those people get their lives back.

Pacemaker for the Brain

People like Nathan Rivera, even though he suffers from Parkinson's Disease, can control his body thanks to a pacemaker. It doesn't send electrical signals to his heart, though. They go directly to the part of his brain in charge of motion.

To demonstrate how well it works, Rivera turned it off and immediately began to shake uncontrollably.

Before Rivera got his brain pacemaker, also called a deep brain stimulator, he was like many Parkinson's patients: a prisoner in his own body.

As a minister, Rivera's violent tremors prevented him and his wife Elizabeth from fulfilling their mission to reach Spanish-speaking citizens around Youngstown, Ohio. Rivera recalled how normal activities like walking and getting dressed were nearly impossible.

"I had problems doing the simplest things, like bringing my wife a cup of coffee or something. My hand would shake so much the coffee would spill. I couldn't really eat," he said.

Deep Brain Stimulation

Rivera heard about deep brain stimulation, performed by neurosurgeon Darlene Lobel at the renowned Cleveland Clinic.

"It's important to understand that deep brain stimulation is not a cure for Parkinson's Disease," Lobel said.

"It will treat the symptoms. It treats tremors very well. It controls about 90 percent of tremors, which is impressive. For stiffness and slowness of movement it controls about 70 to 80 percent of those symptoms. The effect is durable, which means it lasts over a number of years," she explained.

Even though that sounded great to Rivera, he admitted he was not very excited about the fact that he would have to be awake during the surgery. He recounted praying about it.

"And I said, 'God, why do I have to go through an operation when You can just touch me and heal me?'" he said.

The operation involved placing sensors in the exact locations of the brain that control motor function. Pinpointing those spots meant Nathan had to follow the doctor's commands while the doctor worked inside Nathan's brain.

Nathan said the commands were simple.

"Move your right hand, move it to the left, can you move this, move your fingers, move your hand up, move your hand down," he recalled.

Painless Surgery

Although the idea of being awake during brain surgery sounded unnerving, Dr. Lobel said at least it doesn't hurt.

"The skin has sensation and can feel pain. But as soon as we put in local anesthetic they don't feel anything else for the entire procedure. There's no pain endings in the brain, for example," she explains.

Nathan said during the surgery he had to focus on keeping calm.

"I didn't know what else to think about. I just kept on saying, 'I gotta concentrate on something, so I'm not concentrating on what's going on because this is taking a long time.' But it took a long time, and the nurse kept on asking me if I was okay and she kept talking to me to keep me busy," he said.

The surgeon stretches a thin wire from the brain to a generator implanted near the collarbone, and then when it's all over there is a test.

"And this the most wonderful part of the surgery," Dr. Lobel smiled, "Patients are there in the operating room. We've held their medications, so their tremors are usually pretty severe at that point. As soon as we turn on the stimulator, they see their hand stop shaking and that's the best feeling in the world for them, and for me as a surgeon."

Since there is no cure for Parkinson's, it will continue to attack Nathan's body. But thanks to deep brain stimulation, he can stay one step ahead of the shaking.

"Because of the way I was, I couldn't function," he said. "But now I'm able to function. We're in ministry, my wife's in evangelism, we go out and preach to other churches, and why not use this as part of my testimony."

For more information contact the Center for Neurological Restoration directly:

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