Small electronic device zaps big aches

Implant can change life for chronic pain sufferers, MD says

By **EVA HOARE**
Staff Reporter

It's not much bigger than a toonie, but it can buy near miracles for chronic pain sufferers and could signify a dramatic change in how patients are treated around the world.

And two months ago, a Halifax woman with serious lower back and leg pain was one of the first to have the small electronic device implanted.

"It is one of the first in the world," said Dr. Ivar Mendez, one of the founders of the Brain Repair Centre and a well-known Halifax neurosurgeon. "It is the first in the country."

The unidentified woman is taking less medication and has a much better quality of life because of increased mobility, said Mendez, who inserted the device during a 2½-hour surgery. The implant is made by Medtronic, a medical technology company based in Minneapolis, Minn.

"Living with pain, it's a major problem. The implant experience has been very, very positive," said the surgeon, who has conducted an identical procedure on two other Nova Scotians.

Ten Canadians now live with the spinal cord stimulator.

"She doesn't have to do anything," he said, referring to the Halifax woman, who also doesn't have to manually control the implant.

Dr. Ivar Mendez, head of the division of neurosurgery at the Halifax Infirmary's Brain Repair Centre, displays an implant computer used for spinal cord stimulation at the centre Thursday. *(TIM KROCHAK / Staff)*

The small electronic device is placed in the abdomen and attached with wires to the spinal cord. It automatically sends impulses to the brain to cease pain, so when a patient is about to experience sudden or chronic pain they instead feel a vibration, said Mendez in an interview Thursday.

There are no wires or any other equipment outside the body after surgery. Instead, the stimulator senses movements that would either cause or reduce pain and acts automatically, said Mendez.

It uses an advanced form of motion sensor technology found in iPhones and Nintendo Wii controllers. And it can be recharged through the skin, cutting out the need for a second surgery.

"These devices are what we call intelligent devices," Mendez said. "Everything's inside the body. Everything is internal."

The implant is about five centimetres wide, about 0.6 centimetre thick and weighs very little. The patient is awake during the first stage of the operation so surgeons can ensure the device is in the right spot. The patient then goes under anesthetic while it's installed.

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Mendez said as technology advances, the stimulator or something like it could one day be used for a variety of ailments, including aborting an epileptic seizure or helping tremors suffered by those afflicted with Parkinson's disease.

It could also potentially be used to control medicine dosages, while monitoring and adjusting blood pressure and blood sugar levels are also possible jobs for this technology, said Mendez.

"We will be able to do things that were unthinkable before. You can imagine all these things. There's so many things that could happen in the future."

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