

MBP and The NeuroMedical Center Make History in Baton Rouge

Radiation Oncologists Partner with Neurosurgeons To Treat Trigeminal Neuralgia -- A Non-Cancerous Condition

It is often called the suicide disease because of the number of people who take their lives when nothing works to ease the pain. Together, Mary Bird Perkins Cancer Center (MBPCC) and The NeuroMedical Center in Baton Rouge are working to give hope to patients who have lived with extreme pain for years. This innovative combination of technology, neurosurgery, and radiation oncology has benefited the very first patient in the Baton Rouge area who received this leading-edge treatment.

Dr. Renee Levine, radiation oncologist at MBPCC, along with local neurosurgeons Drs. Luke Corsten and Paul Waguespack of The NeuroMedical Center, recently collaborated to successfully treat patient Susan Brook's trigeminal neuralgia (TN) with stereotactic radiosurgery. Using the precision of the BrainLAB Novalis image guided radiation treatment system at MBPCC, Brook was freed from an excruciatingly painful non-cancerous neurological disorder she had endured for eight years.

"I went in with pain and I came out with no pain," said Brook. "To me it's a miracle. I'm finally able to show my real smile, not my 'game face' through pain." Before her treatment 48-year-old Brook, a speech therapist from Alexandria, LA said she was having almost 20 onsets a month. "It felt like lightning strikes across the right side of my face. I couldn't feel my eyeball or move my jaw. I couldn't function or think when I had an attack."

Trigeminal neuralgia is a disorder of the sensory fibers of the trigeminal nerve, the fifth cranial nerve, characterized by attacks of excruciating, stabbing pains in the jaw or face which usually last for several seconds. The exact cause of the disorder is not fully understood. While not fatal, it is universally considered to be the most painful affliction known to medical practice.

"Most of the medications successfully used to treat trigeminal neuralgia are anti-epileptic drugs," explained Dr. Waguespack, "but often patients have pain beyond what these drugs can control, or they can't tolerate the side effects." The latter was the case with Susan Brook.

Enter BrainLAB Novalis technology, the only machine of its kind in Louisiana. Novalis is used for shaped Beam Surgery,



Pictured (l to r) are Dr. Luke Corsten, patient Susan Brook, Dr. Renee Levine and Dr. Paul Waguespack.

a non-invasive delivery of a precise dose of high-energy radiation particularly useful for cancers of the head, spine and prostate, and now benign disease – such as trigeminal neuralgia. "Due to advancements in imaging technology and the flexibility and precision of Novalis, we can create an area of 'controlled injury' to the trigeminal nerve, interrupting the pain pathway," said Waguespack. "It is critical to be able to see the nerve and brain stem before proceeding so we can 'injure' the nerve exactly where we need to, without harming surrounding tissue."

Dr. Levine agreed. "The trigeminal nerve is so small that advanced imaging techniques are necessary to confidently define where it is in space. You need to reliably know where the target is and then you need to reliably target it - - this takes close cooperation between The NeuroMedical Center's imaging department and Mary Bird's physics department." Using a visual aid to show that the targeted nerve approximates the diameter of a plastic coffee stirrer, Levine explained that the radiation has to hit the nerve right in the middle and right as it comes off the brain stem. "You have to hit the right place or you can damage the brain stem."

Using BrainLAB Novalis software to fuse Brook's MRI images from The NeuroMedical Center with her treatment-planning CTs from Mary Bird Perkins, MBPCC medical physicists were able to capture two, one-millimeter fused "slices" showing the tiny trigeminal nerve's exact entry to the brain stem. This level of precision is required for successful outcomes. Novalis was the first technology to incorporate both precise shaping of radiation beams to conform to a tumor and image guidance using x-rays and infrared localization.

Susan's story aired on WAFB News Channel 9 on July 25, 2006.