

pituitary tumors

Big surgical improvements made possible by tiny camera

by Lindsey Burke

When Norma Villarreal, 69, began experiencing excruciating pain in her lower back and leg, doctors told her she might have suffered a heart attack.

"I'm a bit of a jokester," Villarreal said, "so I told them that if my heart was in my rear end, then perhaps it was a heart attack."

An additional panel of tests revealed an issue with Villarreal's pituitary gland: a tumor had developed on the gland, and it was too large to ignore. The pituitary gland, a pea-sized gland that sits at the base of the brain, controls peripheral endocrine glands including the adrenal and thyroid glands and glands that produce growth hormone, testosterone in men, and estrogen in women.

If Villarreal's tumor were allowed to grow, it could put pressure on adjacent areas of the brain, causing blindness, loss of brain function, or even death.

Villarreal was referred to Barrow where neurosurgeon and pituitary disorder specialist Andrew S. Little, MD, made the initial assessment.

"Norma had no symptoms that would lead you to immediately suspect a pituitary tumor," Dr. Little said. "But the walnut-sized tumor was close to her brain stem, optic nerve, and carotid artery, and might eventually affect her hormone levels."

Dr. Little, together with Barrow neurosurgeon Peter Nakaji, MD, planned Villarreal's surgery using an advanced endoscopic approach. In this procedure, the entire tumor removal is done through the nostrils without making a skin incision, reducing the patient's pain and shortening the hospital stay.

"The endoscopic approach adds a new dimension to a standard operation," Dr. Little said. "Instead of placing a microscope at the opening of the nostril, we are able to use a tiny camera attached to the end of a scope that is less than four millimeters in diameter, but provides an unmatched view of the surgical field. You can see places you just can't with a traditional microscope, and this results in better tumor resections." Villarreal's post-operative MRI showed complete tumor removal.

While the endoscopic approach is considered a less common technique for pituitary tumor removal, Barrow physicians routinely use it with extraordinary

results. So extraordinary, in fact, that Dr. Little and Dr. Nakaji were asked by Visionsense, a Palo Alto, Calif., company, to help develop 3D technology to enhance traditional endoscopes.

"Staying ahead of the curve with new technology makes surgery safer and allows us to do a better job," Dr. Little said.

"I did a lot of research before my surgery," Villarreal said. "I read about the different surgical options and was so happy to know that Dr. Little was using the endoscope. The risk factors were so low and recovery so much faster."

Villarreal was discharged from the hospital two days after surgery. "The only pain I felt was some soreness in my nose, but that was expected," she said. "I was told to take it easy for about 10 days, but then I was able to go back to my dog grooming business and do all the things I was doing before."

"I'm a healthy woman, so that was a relief. Dr. Little was beyond anything I could imagine. He was absolutely wonderful." ■



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Andrew Little, MD

Andrew Little, MD, John Milligan, MD, and Peter Nakaji, MD, use endoscopes to remove a pituitary tumor at Barrow.

Collaboration is key to success of Barrow Pituitary Center

Barrow’s staff has more experience treating patients with pituitary disorders than any other facility in the Southwest.

The Center evaluates and treats patients who are suffering from neuroendocrine disorders and pituitary tumors such as adenomas, prolactinomas, craniopharyngiomas, Cushing’s disease, acromegaly, and gigantism. Patients are treated through a multidisciplinary approach that draws on the expertise of specialists in many disciplines, including endocrinology, neurology, neurosurgery, neuropsychology, ophthalmology, and radiation oncology.

Key Pituitary Center team members are pictured at right: Andrew S. Little, MD, neurosurgeon; Burt Feuerstein, PhD, neuro-oncology researcher; Laura A. Knecht, MD, faculty physician in endocrinology, Department of Internal Medicine, and medical director of the Pituitary Center; and William L. White, MD, FACS, chief of surgical endocrinology.

