

ENDOSCOPIC NEUROSURGERY

No Incisions. No Scarring.

Located at the base of the brain, the pituitary gland weighs only 0.5 grams, and is about the size of a pea. And yet, the hormones that come from the pituitary gland help control many bodily functions including growth and blood pressure. It also sends instructions to other glands in the endocrine system. In some cases, the pituitary gland can also be the site of a tumor.

Pituitary tumors are usually benign, but they can create severe symptoms. As the tumor grows, it can press against the optic nerves, causing issues with vision. It may also cause progressive, severe headaches, and even stroke.

That was the situation for Maria, 43, of Springfield, who was experiencing terrible headaches and a frightening, sudden decline in vision. After an MRI and visual field testing confirmed the diagnosis of a benign pituitary tumor, her neurologist at Kaiser Permanente referred her to neurosurgeon **Richard D. Murray, MD**, an expert in minimally invasive cranial surgery and pituitary tumors.

Originally from South Africa, Dr. Murray completed his neurosurgery residency at the University of Vermont, followed by specialized training in complex cranial surgery and microneurosurgery at Louisiana State University and endoscopic skull base surgery at Weill Cornell Medical College. Along with his partner, **Donald C. Wright, MD**, Vice Chief of Neurosurgery, Dr. Murray utilizes the advanced microneurosurgery technology available at Virginia Hospital Center.

Previously, pituitary tumor surgery required cutting through the top or side of the patient's skull to access the tumor. This increased the potential for complications, resulting in a longer hospital stay and a slower recovery time.

“Everyone was shocked at my quick recovery—and that I had no scars after having major brain surgery.”

– **Maria** / Surgery Patient

Instead, endoscopic microneurosurgery uses an operating microscope and special micro instruments to approach the base of the brain through the nose or mouth. It is minimally invasive surgery, and does not require a large exterior incision or removal of a large piece of the skull. Appropriate for selective midline skull base tumors, endoscopic neurosurgery is a team approach involving a neurosurgeon and an ENT (Ear, Nose & Throat) specialist, both for reconstruction and aftercare.



Neurosurgeon Richard D. Murray, MD

“Performing surgery endoscopically enables us to operate in a safer way, thereby lowering the risk of complications and morbidity,” says Dr. Murray.

To access Maria's pituitary tumor, first **Joseph Lee, MD** (ENT) widened the natural pathway through the sinuses. Then, Dr. Murray made a small mucosal incision at the back of the nasal cavity. Using neuronavigation, a preoperative MRI scan allowed him to see through the bone and avoid sensitive brain structures. Operating from underneath the brain, Dr. Murray removed the tumor, which had been pressing against the optic nerve.

“Like Maria, most patients are surprised to learn that the operation can be performed without leaving scars on the outside of their head,” says Dr. Murray. “And, they are pleased with the prospect of faster healing and elimination or reduction of symptoms.” After surgery there is minimal soreness and pain, which recede in a few days. “It feels like a bad sinus cold, with some swelling and difficulty in smelling,” explains Dr. Murray. “But, that feeling fades quickly.”

When Maria woke up the day after surgery, she says, “I could see almost perfectly! It was amazing.” Her stay in the Hospital lasted just four days. Within a month, she was back at work.