

New Techniques

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MINIMALLY INVASIVE BRAIN SURGERY

New techniques and new technologies are utilized by our neurosurgeons to minimize your stay in the hospital and provide less invasive brain surgery. Techniques such as preop and intraoperative target localization, cosmetic incisions, titanium burr hole covers, microscopy, microdissection, and intraoperative real-time monitoring of brain and spinal cord function have resulted in less invasive surgeries and improved outcomes.

NEW BRAIN TUMOR TREATMENTS

Our neurosurgeons have extensive experience with Gliadel wafers, the latest FDA approved intraoperative chemotherapy wafers to be utilized in the treatment at the most common, but unfortunately the most malignant type of brain tumor, the glioblastoma. This sterile chemotherapy wafer is placed exactly by our neurosurgeons exactly where the medication is needed after removing the tumor and prevents many of the systemic side effects, which were seen in the past with systemic chemotherapy. This new FDA approved treatment has significantly improved the outcome of these difficult types of glial tumors of the brain.

INTRAOPERATIVE REAL-TIME BRAIN AND SPINAL CORD NEUROMONITORING

Our neurosurgeons frequently utilize intraoperative real-time neuromonitoring to monitor the brain and spinal cord pathways that control movement and function. This state-of-the-art system generates audio and visual signals for use in surgery. This neuromonitoring can improve the safety of your spine or brain surgery.

POSITIONAL NEUROIMAGING

Our practice is the first neurosurgery office in the world to offer positional neuroimaging with the open standup MRI. Over 100 peer-reviewed publications have shown the advantages of positional imaging in under-covering occult neuropathology. ACR accreditation, which evaluates qualifications of personnel, equipment quality control, and quality of clinical images, is the primary factor that impacts the quality of clinical images and the quality of patient care. Physicians armed with a more accurate and precise clinical diagnosis can design and tailor a more accurate treatment plan.

PERCUTANEOUS BALLOON KYPHOPLASTY

Kyphoplasty is a new minimally invasive technique where a needle is placed into the vertebral body and a balloon is inflated and then bone cement is placed after removal of the bone. This new technique has potential advantages such as reduction of the fracture. This procedure can be performed in patients with painful fractures of the spine caused by osteoporosis or a multitude of other diagnoses. This procedure may help prevent some of the long-term side effects of untreated vertebral fractures such as spinal deformity, functional impairment, decreased quality of life, loss of pulmonary function, increased mortality, and a slow downward spiral. At the time of kyphoplasty, a biopsy is obtained as well to exclude a diagnosis of occult cancer which can weaken bones. This procedure can be performed minimally invasively through a needle.

MINIMALLY INVASIVE SPINE SURGERY

Minimally invasive spine surgery is a technique where a surgery is performed with the use of a microscope and special retractors or microscope and a micro access dilation port or minimally invasive implants. These techniques allow direct visualization and are minimally invasive. Patients frequently only require a short stay at the hospital and a small incision. The X-Stop is a new FDA approved minimally invasive spine surgical device for the treatment of spinal stenosis, and back and leg pain. This device and technique is much less invasive than previous neurosurgical procedures for a spinal stenosis.

STEREOTACTIC RADIOSURGERY

Stereotactic radiosurgery has been developed as an alternative to open intracranial surgery for certain inoperable or recurrent tumors, AVMs, and other problems of the central nervous system. Stereotactic radiosurgery offers an alternative for individuals who may not be able to tolerate a major open neurosurgical procedure due to illness, age, or who have neurological diagnoses in inoperable or eloquent locations of the brain.