

## Dr. Notarianni, fellowship-trained pediatric neurosurgeon at LSUHSC-Shreveport



Dr. Christina Notarianni  
Assistant Professor  
Dept. of Neurosurgery

Dr. Christina Notarianni joined the Department of Neurosurgery at Louisiana State University Health Sciences Center in Shreveport on September 1, 2010, after completing a pediatric neurosurgery fellowship at University of Tennessee Health Sciences Center in Memphis, Tennessee where she gained experience at St. Jude Children's Hospital. She joins the staff at LSUHSC-S as a fellowship-trained Pediatric Neurosurgeon in Northwest Louisiana.

Dr. Notarianni received her Bachelor of Science in Biochemistry at Louisiana State University in Baton Rouge; her Doctor of Medicine at Louisiana State

University Health Sciences Center in Shreveport; and completed her Neurosurgery Residency at Louisiana State University Health Sciences Center in Shreveport.

Dr. Notarianni has published numerous peer reviewed articles and has presented at numerous annual meetings for the American Association of Neurological Surgeons, Southern Neurosurgical Society, North American Skull Base Society, and Congress of Neurological Surgeons, Society of University Neurosurgeons and Louisiana Neurosurgical Society.

Among other honors and awards, Dr. Notarianni has received the Donald R. Smith Award for Excellence in Neurosurgery, the Best Scientific Abstract Presentation at the Louisiana Association of Neurological Surgeons, and she was a Grand Rounds speaker at Centenary College. She has been involved in many societies and has received several scholarships while attaining her training and education.

Dr. Notarianni is a member of the following professional societies: Louisiana State Medical Society, Shreveport Medical Society, Women in Neurosurgery, Congress of Neurological Surgeons, and the American Association of Neurological Surgeons.

LSUHSC - S and University Neurosurgery are delighted to welcome Dr. Notarianni.

## LSUHSC-Shreveport hosts Neuro Update 2010

The LSU Health Sciences Center Department of Neurosurgery, in conjunction with Northwestern State University College of Nursing, hosted the Neuro Update 2010. The Neuro Update is a one-day continuing education course; held at the Shreveport Convention Center located in downtown Shreveport, Louisiana.

The Neuro Update featured a unique mix of neuroscience-related topics and ideas. Dr. Roger Kelley, Professor and Chairman of the Department of Neurology at Tulane University in New Orleans, Louisiana, was the honored guest speaker for more than 150 participants. His lecture, "Ischemic Stroke Update 2010," contained current information on stroke prevention, recognition, care, and treatment.

Participants in the Neuro Update included nurses, nurse practitioners, physician assistants, physicians, and other allied healthcare professionals interested in neurological issues. This is the fourth Neuro Update in a series of CME programs hosted by University Neurosurgery. Guests traveled from Louisiana, Texas, and Arkansas.

The Neuro Update is designed to advance knowledge through various enlightening presentations, especially benefiting those who do not

encounter patients with neurological or neurosurgical issues on a daily basis.

Additional speakers included the following: Dr. Robert Schwendimann, Dr. Anthony Sin, Dr. David McCarty, Dr. Hugo Cuellar, Dr. Anil Nanda, Dr. Ali Minagar, Dr. Christina Notarianni, Dr. John W. Kevill, Dr. Bharat Guthikonda, and Dr. Jon D. Wilson.



Dr. Schwendimann, Dr. Kelley, and Dr. Nanda at the Neuro Update 2010

## UNIVERSITY NEUROSURGERY FACULTY:

**ANIL NANDA, MD, FACS**  
Professor  
Department Chairman

**DONALD R. SMITH, MD**  
Clinical Professor

**BRIAN K. WILLIS, MD, FACS**  
Professor

**BHARAT GUTHIKONDA, MD**  
Assistant Professor

**ANTHONY SIN, MD**  
Assistant Professor

**CHRISTINA NOTARIANNI, MD**  
Assistant Professor

**HUGO CUELLAR, MD**  
Assistant Professor

**GUOHONG LI, MD, PhD**  
Assistant Professor of Research

**GLORIA CALDITO, PhD**  
Associate Professor of Biometry  
Biostatistician

University Neurosurgery  
Brain & Spinal Column

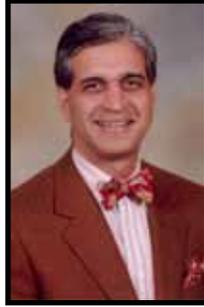
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## Message from the Chairman

After witnessing two snowstorms in Shreveport, we are ready for a rejuvenating spring. Things are going well with the department.

Our newest recruit, Dr. Christina Notarianni, is doing a spectacular job with pediatric neurosurgery and continues to get referrals for brain tumors and complex pediatric problems. The department was delighted to host the Neuro Update and hopes to have two additional conferences this year. We hope you'll be able to join us. We are delighted to present some articles

regarding updates on skull base and spinal surgery. As always, if we can ever facilitate your neurosurgical needs in terms of patient transfers, consultations, or CME requirements, let us know. Wishing you a great summer!

Sincerely,

Anil Nanda, MD, FACS  
Professor and Chairman  
Department of Neurosurgery

## University Neurosurgery Recent Publications

1. Nanda A, Javalkar V, Banerjee AD. **Petroclival meningiomas: study on outcomes, complications, and recurrence rates.** J Neurosurg. 2010 Dec 24.
2. Cardenas R, Connor D, Javalkar V, Williams M, Nanda A. **Coil embolization of intracranial aneurysms, the LSUHSC-S experience.** J La State Med Soc. 2010 Sep-Oct;162(5):260-4.
3. Nanda A, Javalkar V. **Microneurosurgical management of ophthalmic segment of the ICA aneurysms: single surgeon operative experience from LSU Shreveport.** Neurosurgery. 2010 Dec 22.
4. Javalkar V, Banerjee AD, Nanda A. **Paraclinoid carotid aneurysms.** J Clin Neurosci. 2011 Jan;18(1):13-22. Epub 2010 Dec 3.
5. Javalkar V, Cardenas R, Ampil F, Ahmed O, Shi R, Nanda A. **The Louisiana State University experience in the management of single small cerebellar metastasis.** Neurosurgery. 2010 Dec;67(6):1515-22.
6. Sampath R, Vannemreddy P, Nanda A. **Fusiform aneurysms of the anterior communicating artery: illustrative series of 5 cases with operative techniques.** Neurosurgery. 2010 Dec;67(2 Suppl Operative):407-15.
7. Chittiboina P, Willet O, Nanda A, Guthikonda B. **Transient oculomotor nerve palsy after topical administration of intracisternal papaverine.** Acta Neurochir (Wien). 2010 Nov 14.
8. Guthikonda B, Nourbakhsh A, Notarianni C, Vannemreddy P, Nanda A. **Middle turbinectomy for exposure in endoscopic endonasal transsphenoidal surgery: when is it necessary?** Laryngoscope. 2010 Dec;120(12):2360-6.
9. Nourbakhsh A, Chittiboina P, Vannemreddy P, Nanda A, Guthikonda B. **Feasibility of thoracic nerve root preservation in posterior transpedicular vertebrectomy with anterior column cage insertion: a cadaveric study.** J Neurosurg Spine. 2010 Nov;13(5):630-5.
10. Cardenas R, Javalkar V, Ezer H, Burnham J, Nanda A. **Occipital inter-hemispheric transtentorial approach to the superior cerebellum.** J Clin Neurosci. 2011 Jan;18(1):128-30.

## Complex Spine

### Anthony Sin MD



A proliferation of spinal instrumentation has provided a small section of the United States population with multiple spinal surgeries during one's lifetime. Fortunately, a majority of patients with multiple spinal surgeries have a successful outcome. However, there is a minority of patients with "failed back syndrome" and some of these patients may benefit from even more operations. Hence, there are an even smaller number of spinal surgeons willing to be a "Revision Specialist."

An absolute number of surgeries do not make much of a difference in the decision making process. A patient may have had five previous surgeries, but four of the procedures could be simply due to post-operative infections and wound revisions. If the same patient had only two procedures, but it included a long, segmented fusion from T10 to iliac, this clearly

represents added complexity when revising. Although overall general health, age, and number of previous surgeries play an essential role in the decision making process, the two most critical questions have to be answered by the patient: "Can you tolerate/live with the current pain level? What are you willing to risk in order to alleviate pain level?"



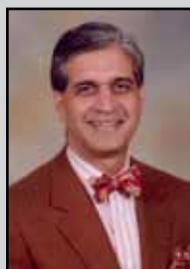
**45 yo female with multiple surgeries after MVA failed to heal properly. It was complicated by infections and failed instrumentations. She recently underwent posterior correction of her kyphosis. This was approximately her eighth surgery.**

Once the decision is made to proceed with a revision, a proper pre-operative evaluation should be done to optimize the best possible outcome for the patient.

Patients can be classified into two groups: fused and not fused. If there is a pseudoarthrosis (no fusion), the focus of the revision is to achieve a subsequent solid fusion. This involves different approaches, including interbody augmentation with biologics, i.e. cages with bone morphogenic protein, with added instrumentations. The other group of patients (fused) is harder to treat, and sometimes there may not be a good surgical solution. Instrumentations can cause muscle and facet irritations, especially in a thin person. Sometimes a simple removal of instrumentations can provide immediate pain relief. A subset of patients can also benefit from a trial of spinal cord stimulation, which can be done in an outpatient setting.



### Department of Neurosurgery Faculty:



Anil Nanda, MD, FACS  
Professor and Chairman



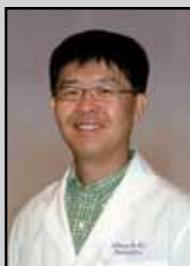
Donald R. Smith, MD  
Clinical Professor



Brian K. Willis, MD, FACS  
Professor



Bharat Guthikonda, MD  
Assistant Professor



Anthony Sin, MD  
Assistant Professor



Christina Notarianni, MD  
Assistant Professor



Hugo Cuellar, MD  
Assistant Professor

## LSUHSC-S Craniofacial Team Completes 100th Case



Dr. Brian Willis  
Professor  
Dept. of Neurosurgery

The LSUHSC-Shreveport Craniofacial Team, a joint effort between the Departments of Neurosurgery and Oromaxillofacial Surgery, has recently passed a caseload milestone, having completed their 100th complex cranial vault reconstruction for congenital craniofacial deformities.

Dr. Brian Willis, Professor in the Department of Neurosurgery, and Dr. Ghali E. Ghali, Professor and Chair of the Department of Oromaxillofacial Surgery, have been in collaboration since 1995 in providing craniofacial remodeling for Louisiana children with craniosynostosis.

One hundred and one cases of craniosynostosis have been treated with outstanding results and extremely low morbidity and mortality. Ninety-five of these cases have been non-syndromic synostosis, half

of these producing scaphocephaly from premature fusion of the midline sagittal suture, about one-fourth causing trigonocephaly of the forehead, and the remainder being one or two suture synostosis of other sutures. The most complex and challenging operations, though, are for the syndromic cases. This includes children with profound craniofacial anomalies caused by genetic disorders, such as Apert's, Crouzon's, and Pfeiffer's syndromes. Dr. Willis and Dr. Ghali have now reconstructed the skulls and faces of six of these children.

Most of the children who undergo evaluation and treatment by the Craniofacial Team are between the ages of six and 12 months. The operative procedure usually takes three to five hours, and may include removal of parts or all of the cranial vault, as well as the frontal orbital ridge. Orbital ridge advancement, if needed in these cases, is what Drs. Willis and Ghali feel really provides such excellent results. The children then typically remain in the Pediatric ICU for one to two days, then another few days on the regular pediatric floor, before being discharged. "Much of the excellent results we have

achieved has to be credited to the superb care our patients receive from LSU's PICU staff and doctors," said Dr. Willis, "they, too, are an invaluable part of this team." The Craniofacial Team is also excited to add Dr. Christina Notarianni to their faculty. Dr. Notarianni is heading up the Department of Neurosurgery's Pediatric Neurosurgery Program.

Dr. Willis says, "It has always amazed and fascinated me as to how well these young infants and toddlers do after surgery, despite the magnitude of the procedure, where in some cases the entire cranial vault is removed and then reconstructed. Their post-operative courses are typically very smooth sailing, and parents seem to be very pleased with how it all turns out. A year or so later, one can hardly tell the kids ever had anything wrong with their head shape."

Families who are interested in getting more information on the LSU Craniofacial Program or getting an appointment can call Dr. Willis' office at 318-742-8666, or Dr. Ghali's office at 318-675-8068.

## X-STOP for the treatment of Spinal Stenosis

**Shashikant Patil MD, Christopher Storey PhD, Anil Nanda MD, FACS**

Neurogenic intermittent claudication (NIC) is a well-known symptom complex of spinal stenosis, where symptoms are exacerbated upon standing or with lumbar extension; symptoms are relieved by sitting or lumbar flexion. Treatment options include non-surgical treatments like non-steroidal anti-inflammatory drugs, activity modification, physical therapy and epidural steroid injections. Surgical treatment mainly involves decompression of neural elements at the site of stenosis or compression.

Surgical decompression, however, involves removal of lamina, facets, and ligaments that play a role in lumbar stability. To overcome this interspinous process distraction device (X-Stop), an oval titanium spacer was developed. The spacer prevents extension and causes slight flexion between stenosed lumbar vertebrae. Distraction at the interspinous

space is thought to relieve symptoms of spinal stenosis or NIC.

By limiting extension at the affected segment, the X-Stop prevents narrowing of the spinal canal and neural foramina, thus alleviating the patient's symptoms.

To evaluate the efficacy of this new device, we studied 31 patients who had X-Stop devices placed at our institution between 2006 and 2007. The Zurich Claudication Questionnaire (ZCQ) was used as a measure of quality of life, and it focuses on symptom severity and decreased function caused by lumbar spinal stenosis before and after the placement of X-Stop. Pain and parasthesia symptoms showed significant improvement. No significant improvements were seen with weakness/proprioception or any of the physical functions. Our study showed that X-Stop could be used for symptomatic relief of spinal stenosis, but not for significant improvement in physical function.



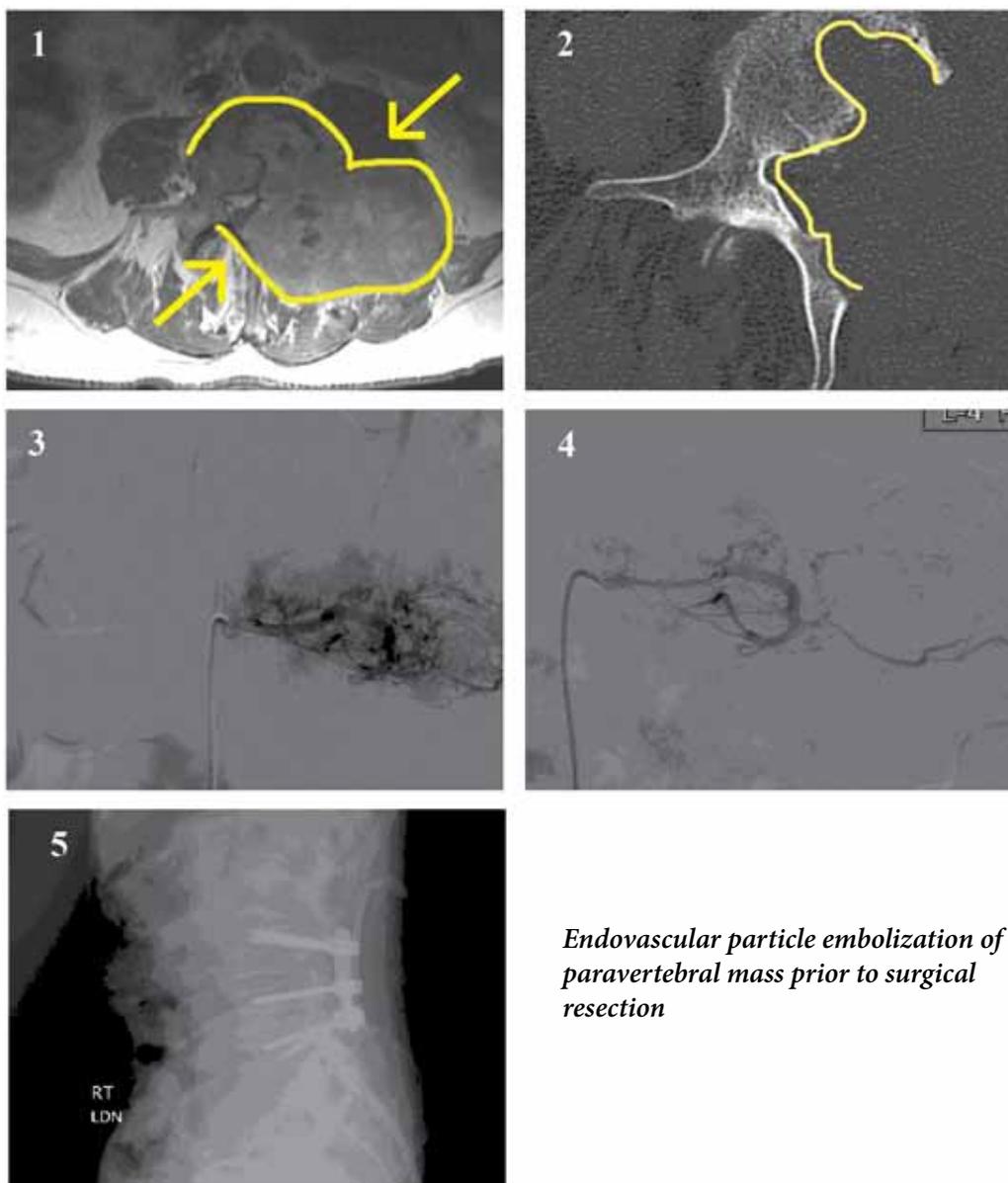
AP View



Lateral View

## Case of the Month

### Metastatic Tumor of the Spine



*Endovascular particle embolization of paravertebral mass prior to surgical resection*

Rishi Wadhwa, MD  
Hugo Cuellar, MD  
Anil Nanda, MD

A 77 yo WM presents from an outside hospital with low back pain and left leg pain in the L4 and L5 dermatomes. He has a history of prostate cancer, which has been treated. On exam, he is neurologically intact with full motor strength but with positive straight leg raise on the left. MRI imaging revealed a 6 x 7 cm mass in the left kidney and a cystic, moderately enhancing 5 x 7 cm mass (Fig 1) with similar imaging characteristics involving the left half of the L4 vertebral body with extension in the epidural space. CT showed a lytic L4 lesion (Fig 2).

Angiography of the left L3 and L4 lumbar arteries showed a hypervascular mass (Fig 3a-3b) with no spinal arteries arising from these levels. PVA (polyvinyl alcohol) particles and gelfoam were used to embolize the mass. We achieved an approximately 90% reduction of blood flow to the mass (Fig 4a-4b). The anterior spinal artery demonstrated good filling pre- and post- embolization.

The patient was taken to the operating room for debulking and stabilization of L3-5 (Fig 5a-5b). The patient tolerated the procedure well and was intact post-procedure. The pathology was metastatic renal cell carcinoma.

**University Neurosurgery's** multidisciplinary team is pleased to serve you and your patients in the following locations.

## Clinics

### LSUHSC-Shreveport

1501 Kings Highway  
Shreveport, LA 71103  
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### Willis Knighton North

Medical Arts Building  
2551 Greenwood Rd., Ste. 320  
Shreveport, LA 71103  
p: 318.635.6363, f: 318.631.5392

### Willis Knighton Bossier

2300 Hospital Drive, Ste. 350  
Bossier City, LA 71111  
p: 318.742.8666, f: 318.742.8488

### Willis Knighton Pierremont

8001 Youree Drive, Ste. 830  
Shreveport, LA 71115  
p: 318.813.1555, f: 318.675.8958

### Christus Schumpert Sutton Children's Hospital

One St. Mary Place  
Shreveport, LA, 71101  
p: 318.675.8913

### Willis Knighton South

2520 Bert Kouns, Ste. 105  
Shreveport, LA 71118  
p: 318.813.1555, f: 318.675.8958

### Gamma Knife Radiosurgery

1501 Kings Highway  
Shreveport, LA 71103  
p: 318.675.6195, f: 318.675.8944

### NeuroInterventional Surgery

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Shreveport, LA 71103  
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**Billing Office: 318.813.1576**

**Business Office: 318.675.8299**

**Editorial Office: 318.675.5392**

**Nursing Office: 318.813.1555, 888.740.7246**

## Department News:

### Awards:

Dr. Shashikant Patil won the Dr. John Jackson award for best clinical research presentation at the 2011 Louisiana Neurosurgical Society Meeting in New Orleans, LA. Dr. Patil presented on "*Incidence and predictors of new onset post-operative hydrocephalus following surgery for skull base pathology.*"

### 2010-11 New Residents:

Marc Manix, MD  
Menarvia Nixon, MD

### International Presentations:

Dr. Bharat Guthikonda and Dr. Anil Nanda attended the 59th Annual Conference of Neurological Society of India & Congress of Neurological Surgeons Joint Meeting in December 2010. Dr. Guthikonda presented "*Middle Turbinectomy For Exposure in Endoscopic Endonasal Transphenoidal Surgery: When is it Necessary?*" and Dr. Nanda presented "*The Surgical Mysteries of the Enigmatic Posterior Fossa,*" and "*Giant Aneurysms: Quo Vadis?*"



### 2011 Upcoming Visiting Professors:

May 4	Kevin Lillehei, MD University of Colorado School of Medicine
June 8	Alan Cohen, MD Rainbow Babies and Children's Hospital
September 21	David Roberts, MD Dartmouth-Hitchcock Medical Center
November 9	Christopher Getch, MD Northwestern University; Feinberg School of Medicine
December 14	Reid Thompson, MD Vanderbilt Brain Tumor Center

### Family News:

- Chris Schillage, OR nurse, and wife, Rachel, gave birth to Elizabeth on April 6, 2011.
- La'Trese LeSane, Dr. Guthikonda's RN, and husband, Travis Fletcher, gave birth to Kaiden on June 15, 2010.
- Dr. Osama Ahmed, PGY-2 Neurosurgery Resident, and wife, Nafisa, gave birth to Anaiya on July 2, 2010.
- Alice Edwards, Dr. Nanda's PA, and husband, Ryan, gave birth to Grant on July 29, 2010.
- Nicole Spikes, Dr. Willis' PA, and husband, Jeff, gave birth to Isaac on December 28, 2010.
- Dr. Cedric Shorter, PGY-6 Neurosurgery Resident, was married to Alicia Brumfield on January 15, 2011.

## Anterior Skull Base Meningiomas

Vijayakumar Javalkar, MD  
Anil Nanda, MD, FACS

Anterior cranial fossa meningiomas constitute about 40% of all intracranial meningiomas. Depending on the dural attachment, these meningiomas can be classified into olfactory groove, planum sphenoidale, clinoidal, diaphragm sellae, orbital roof, and tuberculum sellae. Olfactory groove and tuberculum sellae are the most common locations.

Tuberculum sellae and clinoidal meningiomas, due to their close proximity to optic nerves, frequently present with visual dysfunction. Olfactory groove meningiomas and planum sphenoidale meningiomas

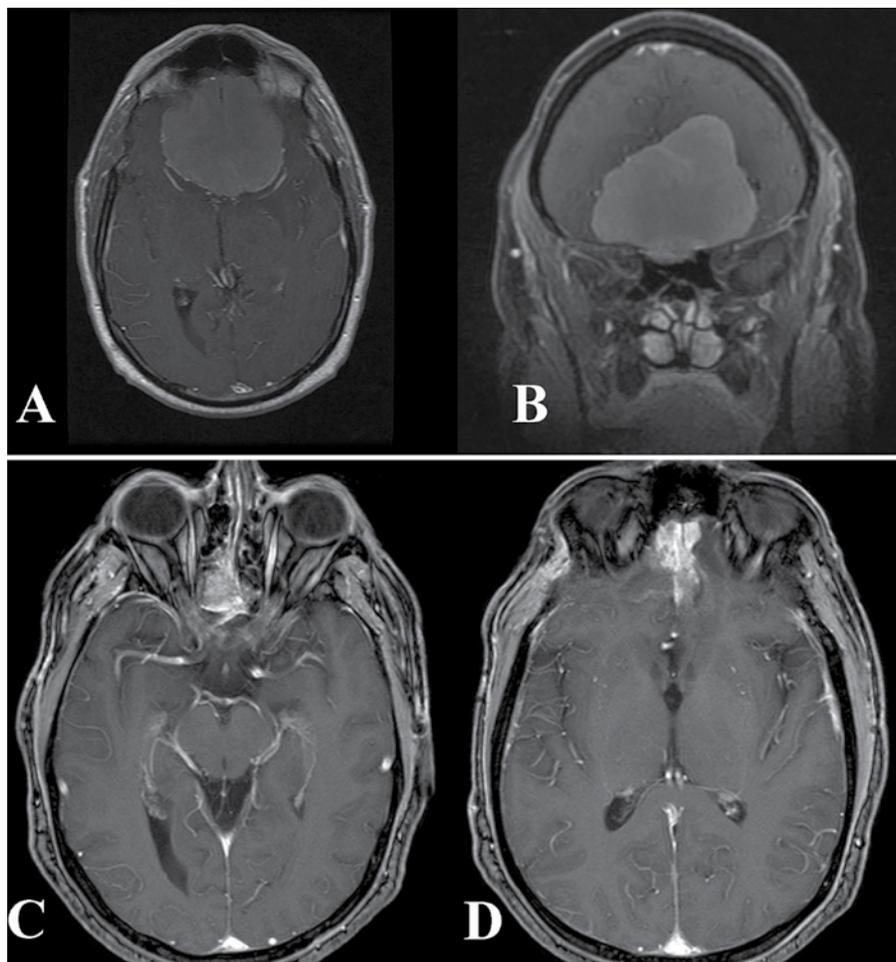
may cause compression of the olfactory pathways, resulting in anosmia/hyposmia. Some patients might present with personality changes as well. The other presenting symptoms include headaches and seizures. There is a tendency for olfactory groove and planum sphenoidale meningiomas to clinically remain silent until they grow to a larger size.

Results of microsurgical excisions are excellent. At LSUHSC-Shreveport, following microsurgical excision, good outcomes (Glasgow outcome score 4+5) were seen in 98% of cases. In addition to microsurgical excision of the anterior skull base meningiomas, endoscopic approaches are described.

Stereotactic radiosurgery is a non-invasive modality of treating small to medium sized anterior skull base meningiomas. Tumors that are appropriate for radiosurgery include up to 3-3.5 cm in size. Fractionated SRT is another modality that utilizes radiation. It is believed that fractional delivery of radiation allows the normal tissue to repair between the fractionated doses.

In small asymptomatic tumors, observation with follow-up MRI scans is an alternative option to surgical resection/radiosurgery/endoscopic resection.

There are currently 101 cases of this particular type of meningioma in our study.



A 58 year-old patient presented with headache and personality changes and was found to have a giant olfactory groove meningioma (A, B). The tumor was removed through the orbitozygomatic approach. Post operative MRI scans show a small residual (C, D). There was a dramatic improvement in his personality following the excision of meningioma. The residual is being followed up with regular MRI scans.

## Department of Neurosurgery

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