University Neurosurgery
Brain & Spinal Column

Volume 2 Summer 2007

Dr. Donald Smith Receives Distinguished Service Award from SNS

Dr. Donald Smith received the Distinguished Service Award from the Southern Neurosurgical Society at their annual conference March 14-17 in Sea Island, Ga.

Dr. Smith is a native of Alto, La and graduated from LSU-Baton Rouge. He obtained his neurosurgical training in the military at Walter Reed Army Hospital in Washington, DC. He served tours in Vietnam and Desert Storm. Dr. Smith is a retired member of the U.S. Air Force Reserves and held the rank of Colonel.

Dr. Donald Smith (center) with his PA Susan Steen (left) and his office nurse Barbara Gilbert at the reception prior to the banquet.

He spent many years in private practice in the community before joining our faculty. He served on the faculty at George Washington University Hospital in Washington, DC and was Director of Neurosurgery Residency Training at that institution from 1974-77.

Dr. Smith has been active in the community and administrative affairs with the hospitals on which he is a staff member. He is a past president of the Louisiana Neurosurgical Society and Shreveport Medical Society, has been involved in the Congress of Neurological Surgeons, and was President of the Willis-Knighton Medical Staff. Currently, he is serving as the part-time Medical Director for Willis-Knighton Medical Center.

Neuro-Interventional Suite Opens at LSUHSC-S

The Neuro-Interventional Suite is a newly dedicated angiography room for advanced procedures in neuroradiology. This $2 million project advances our abilities for procedures such as cerebral aneurysm occulusion, AVM embolization and intracranial stent placement. It provides high quality digital fluoroscopy along with numerous special features for guiding these procedures.

Real-time 3D angiography and 3D roadmapping allow for improved treatment planning and the ability to navigate wires and catheters directly on the 3D image. This digital imaging also allows acquisition of CT quality images with multiplanar reconstruction to detect any evidence of bleeding, significant swelling of the brain or development of hydrocephalus without leaving the interventional suite.

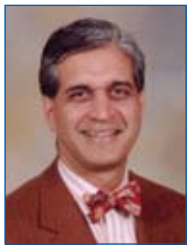
With the ever increasing complexity of procedures in interventional neuroradiology, multimodality integration, image quality and advanced interventional tools are becoming indispensible.

Beneficial Features

- Determine better treatment strategy by reviewing complex anatomical relationships from all angles
- Identify the single most useful perspective for interventional procedures
- Monitor treatment progress during procedures, such as positioning coils, stents, and clips
- Reduce exam time, X-ray dose, and contrast medium for better patient health and quick diagnosis

On the inside...

Message from the Chairman



We are delighted to publish our second issue of the *Brain & Spinal Column,* and have been pleased with the feedback and questions it has generated.

We have established our multidisiplinary brain aneurysm team and inaugurated our new Neuro-Interventional Suite at LSUHSC. This $2 million suite will now enable us to operate on complex aneurysms using coiling and stenting.

Futhermore, it is with great pleasure that we announce the first double graduates from our Neurosurgery Residency Program, Dr. Anthony Sin and Dr. Jorge Gonzalez-Cruz. Dr. Sin is going to do a fellowship in spine and Dr. Cruz is entering into private practice. Both are retaining ties to the Shreveport area and with our medical school.

We are grateful to have the most certified Neuroscience unit in the area with our CNRN nurses making our practice a benchmark for Neuroscience Nursing in the community.

Please feel free to contact me as we are always open to suggestions.

Sincerely,

Anil Nanda, MD, FACS

Profile

Nurse Practitioners & Physician Assistants

Susan L. Steen, MPAS, PA-C

She earned a degree in social work from Northeast Louisiana University and attended LSUS. She received a BS in PA studies from LSUHSC, School of Allied Health. She completed internships at LSUHSC-S, EA Conway, St. Francis, Glenwood Regional, and the VA Medical Centers.

Peter Molnar, NP

He graduated from Northwestern State University with a BS in Nursing in 1990. From graduation until 2004, he worked in the SICU at LSUHSC. In 2004, he earned his Masters in Acute Care Nurse Practicitioner. He is a member of LANP and ACNP.

Alice M. Edwards, MSPA-C

Edwards received a BS degree from LSU A&M in Baton Rouge in Biological Sciences. She attended Baylor College of Medicine in Houston, earning a MS in Physician Assistant Studies. She has an additional year of graduate studies in biology from the University of Houston and is a member of the AAPA, TAPA, and LAPA.

Nicole Spikes, PA-C

Spikes holds two BS degrees, one in Medical Techonology and another in Physician Assistant. She graduated from the LSUHSC Physician Assistant Program and belongs to the LAPA, NLAPA, and AAPA. ■

University Neurosurgery Brain & Spinal Column

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Dena Pruett

University Neurosurgery at a Glance

Anil Nanda, MD, FACS
Professor and Chairman & Neurosurgeon

- Board certified by the American Board of Neurological Surgeons-1993
- Trained in surgical oncology, pediatric neuro-, microneuro- and cranial base surgery
- Specializes in general and spinal neurosurgery, Gamma Knife radiosurgery, skull base tumors, AVMs, and aneurysms
- Performed more than 2,000 aneurysm and skull base tumor surgeries

Brian K. Willis, MD, FACS
Professor & Neurosurgeon

- Served as Chief of Neurosurgical Service at the Albuquerque VAMC
- Served as Director of Neuro-oncology Service at the UNM Cancer Center
- Board certified by the American Board of Neurological Surgeons-1994
- Specializes in the care of infants and children with neurosurgical problems

Donald R. Smith, MD
Clinical Professor & Neurosurgeon

- Trained in the military at Walter Reed Army Hospital
- Served on the faculty at George Washington University Hospital
- Board certified in 1972; spent many years in private practice
- Specializes in spinal surgery and spinal instrumentation

Esther Wylen, MD
Assistant Professor & Neurosurgeon

- Received her medical degree and neurosurgical training from Albany Medical Center with a distinction in research
- Specializes in spinal instrumentation and trauma management
- Medical Director of the Neuroscience Unit at LSUHSC-S
- Academic Coordinator for Junior Medical Student Clerkship in neurosurgery

Michael Williams, MD
Assistant Professor & Interventional Neuroradiologist

- Trained at LSUHSC-S and the University of Tennessee-Memphis
- Board certified by the American Board of Radiology
- Specializes in aneurysm coiling, AVMs, arteriovenous fistula embolization, intracranial and carotid stenting
- Performed more than 250 endovascular aneursym coiling procedures

LSUHSC-S Has Most Certified Neuroscience Unit in the Area

The Dept. of Neurosurgery has five Certified Neuroscience Registered Nurses (CNRN). They are certified by the American Association of Neuroscience Nurses (AANN).

April High, Denise F. Taylor, Tabitha Anne Ward, and Kyloni Phillips Williams received their certification from the AANN. Kris Bryan, a previously certified CNRN, is also a part of University Neurosurgery.

Left to right: Kris Bryan, Denise Taylor, April High, Tabitha Ward, and Dr. Pam Simmons

Each of these RNs have had specialized training from the American Association of Neuroscience Nurses. The training involves intense study in neuroanatomy and physiology, neurological assessment, increased intracranial pressure, craniocerebral injury, brain and spine surgery, seizures, central nervous system tumors, neuromuscular disorders, neurodegenerative disorders, neuro-infections, neuro-vascular conditions, stroke and pediatrics. The exam is given every six months. Nurses need to have been a practicing nurse for two years to be allowed to apply to take the exam.

Kyloni Williams and Anil Nanda, MD, FACS

"Certification ensures that the care that I give is more in-depth," said Tabitha Ward. "I know more about the treatment of aneurysms and brain injuries, and dealing with the after effects. For example, what's normal and what's not normal. The certification training teaches a lot about rehab and neurological diseases." ■

University Neurosurgery is pleased to serve you and your patients. Our new system is geared towards customer service for the physician and the patient.

Clinics

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Interventional Neuroradiology
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***We can** take your emergency transfers. Contact a resident who will assist you in placing your patient.*

Nanda Delivers Presidential Address at SNS in March

Anil Nanda, MD, served as President of the Southern Neurosurgical Society (SNS). He coordinated the 2007 meeting held in Sea Island, Ga. on March 14-17.

As President, he presided over the meeting and gave a Presidential Address titled **"Dharma in Dixie."** This address was a personal tribute to Dr. John McDonald, Dr. Donald Smith, and Dr. Brian Willis. ■

Left to Right (Backrow): Residents Raul Cardenas, MD; Christina Notarianni, MD; Jorge Gonzalez-Cruz, MD; Anthony Sin, MD; Benjamin Brown, MD; (front) Donald Smith, MD; Anil Nanda, MD.

Left to Right: Brian K. Willis, MD; John McDonald, MD; Anil Nanda, MD; and Donald Smith, MD at the awards banquet in honor of Dr. Smith.

Dr. Ben Carson Speaks to Local Kids

World renowned pediatric neurosurgeon, Dr. Ben Carson, spoke to area high school students May 26 at a breakfast held at the Petroleum Club. More than 220 people attended. Rev. Gregory Hudson of New Hope CME Church gave the benediction.

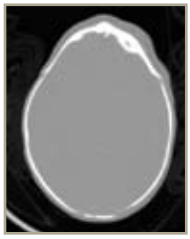
Dr. Carson expressed his hope and faith in the human spirit and the remarkable ability of the brain. For those who say circumstances have made personal success impossible, Dr. Carson, director of pediatric neurosurgery at the Johns Hopkins Medical Institutions, is proof that perseverance, self-respect, and a devotion to acquiring knowledge can overcome obstacles.

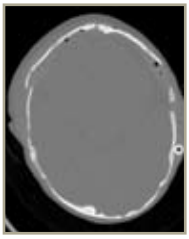
The event was sponsored by the Multicultural Affairs Office at LSUHSC-S, Flannagan Instruments, and University Neuorsurgery.

Craniofacial Team at LSUHSC-S

One of the most challenging yet rewarding problems encountered in Dr. Brian Willis's pediatric neurosurgery practice is the infant with an abnormal skull shape due to craniosynostosis. These children are born with a skull anomaly that does not allow the head to grow in normal directions and dimensions, producing very displeasing appearances. The skull may be elongated, narrow, flattened, or have unsightly bulging.

Rarely do these problems lead to brain damage or intellectual impairment, but they can result in distortion of the head and facial features causing insecurity, poor socialization, inability to properly fit a sports or military helmet, and diminished self-esteem.





Fortunately for infants with craniosynostosis in the Shreveport-Bossier City area, LSUHSC-S has developed a highly successful craniofacial reconstruction team led by Dr. Willis, professor of neurosurgery, and Dr. G.E. Ghali, professor and chairman of the Oral and Maxillofacial Surgery Division. Togehter, these doctors have a combined ten years of experience in complex repair and reconstructive craniofacial procedures. More than 120 infants and small children have developed into healthy youngsters and teens with little to no apparent craniofacial distortion or unfavorable manifestation.

With this highly-trained and experienced team, complications can be minimized and surgical results improved. For more information, call 318.742.8666 or 318.675.6128.

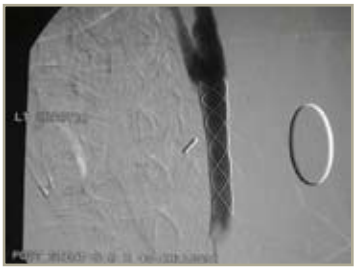
Case Report: Indications for Carotid Stenting vs. CEA

Michael Williams, MD

A 75-year-old man with previous left carotid endarterectomy was found to have a significant stenosis in the proximal left common carotid artery on follow-up ultrasound examination. Due to the location of the lesion low in the neck and his history of previous dissection and difficulties that would have been encountered, Vascular Surgery referred him for carotid artery stenting (CAS).

High grade stenosis in the common carotid artery presumably at the site of the proximal clamp during endarterectomy.

Few procedures in medical history have faced such opposition as CAS has to carotid endarterectomy (CEA). While it is a relatively low risk procedure, it is not without complication, even in low risk asymptomatic patients. Studies have also revealed categories of patients that are at an increased risk of stroke from CEA, including patients with significant medical comorbidities (cardiac and pulmonary), contralateral carotid occlusion, lesion located above angle of the mandible or in the chest, post-radiated neck and previous carotid endarterectomy. Carotid artery stenting is an attractive alternative, however data about the effectiveness and safety in these groups is less well known.



Wide patency following uneventful carotid stent placement with distal protection.

A recent study published data comparing the outcomes in a large group of patients undergoing carotid artery stenting in patients who had previously had CEA. Clinical and angiographic features and outcomes of patients with and without previous CEA were compared. Of 3,070 patients in a German registry, 223 (7.3%) underwent CAS for restenosis after previous CEA.

Death, ipsilateral major stroke, ipsilateral transient ischemic attack, and myocardial infarction were low and not statistically different between those with and without previous CEA. The low risk with less invasive nature of the procedure makes carotid artery stenting a preferred option in the treatment of restenosis following carotid endarterectomy.

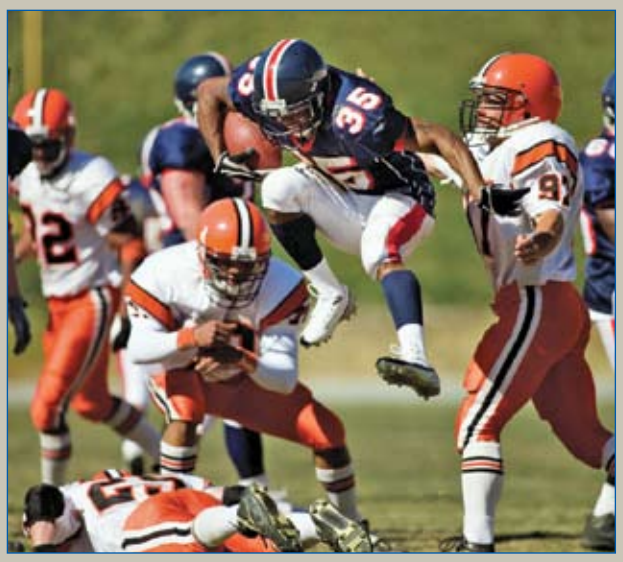
Sports-Related Concussions: A Neurosurgical Perspective

Esther Wylen, MD

Sports-related concussion is an issue with broad-based concern, as it affects athletes on school sports teams as well as professional athletes. One in five high school and college football players suffer a concussion each year.

Concern has been raised regarding the cumulative effects of multiple concussions, especially in athletes who have not adequately recovered from a previous injury. International consensus statements provide guidelines for diagnosis, assessment of recovery, and return to play. Conceptually, a concussion may be thought of as causing a "rapid onset of short lived impairment of neurological function that resolves spontaneously."[1]

A scale of postconcussion symptoms, such as headache and dizziness, is useful for the initial sideline assessment and subsequent evaluations. Returning to play should follow a stepwise progression, beginning with complete rest until the player is asymptomatic. A period of light activity follows, with gradual increments in exercise until full contact training drills are successfully completed. The athlete is then medically cleared to return to play. If symptoms reoccur, the regimen is downgraded to the last level, where the athlete was asymptomatic. Under no circumstances should an athlete that is symptomatic be allowed to return to play. To be safe, follow the adage: "when in doubt, sit them out." ■



Pellman EJ, Viano DC. Concussion in Professional Football. Neurosurg Focus 21(4): 1-10, 2006.

Upcoming Meetings & Lectures

Grand Rounds
James Markert, MD
Director, Division of Neurosurgery
University of Alabama
Sept. 5, 2007, 4 p.m., LSUHSC-S

Grand Rounds
Robert Dempsey, MD
Professor & Chairman
Director, Multidisciplinary Stroke Program, University of Wisconsin
Oct. 3, 2007, 4 p.m., LSUHSC-S

Grand Rounds
Franco DeMonte, MD, FACS
Professor & Deputy Chair
Co-Director, Skull Base Tumor Program, University of Texas
MD Anderson Cancer Center
Nov. 7, 2007, 4 p.m., LSUHSC-S

Grand Rounds
Robert E. Harbaugh, MD
Professor and Chair of Neurosurgery
Penn State
Milton S. Hershey Medical Center
Jan. 16, 2008, 4 p.m., LSUHSC-S

Louisiana Neurosurgical Society Annual Meeting
January 18-19, 2008
City Club River Ranch
The Carriage House Suites
Lafayette, LA

Grand Rounds
Edward H. Oldfield, MD
Senior Investigator
Clinical Neurosurgery Section
National Institute of Health
Feb. 27, 2008, 4 p.m., LSUHSC-S

Mary Louise and Ben Levy, Jr. Visiting Professorship in Neurosurgery
Arthur Day, MD
Director of Cerebrovascular Center
Brigham and Woman's Hospital
March 19, 2008, 10 a.m., LSUHSC-S

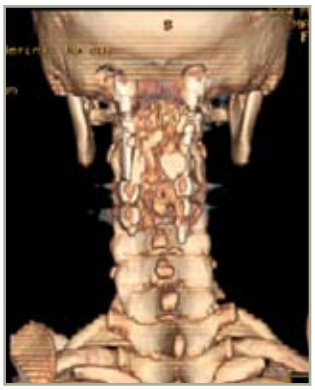
Case Report: Craniocervical Junction

Donald R. Smith, MD
Anthony Sin, MD, Chief Resident

A 19-year-old female was involved in a high-speed motor vehicle accident and brought to the LSU ER. She was awake and following commands with good strength in all four extremities.

However, it was noted immediately that she was not able to turn her head to the left. A CT scan of her cervical spine revealed rotatory subluxation of C1 on C2 with associated fractures. Fortunately, her main vessels appeared to be intact on CT angiograms, despite dramatic displacement of the vertebral elements.

She was admitted to the Neurosurgery ICU for cervical traction and an attempt at closed reduction with weights. Her neurological status remained unchanged; however, her alignment also remained unchanged with only cervical traction. The alignment was reduced by manual manipulation while in traction and clinically monitoring her status in the ICU prior to the operation.



She was taken to the operating room for occipitocervical fusion to stabilize her cervical spine. Occipital screws were connected to the cervical lateral mass screws at C3 and C4 with titanium rods and sublaminar wires at C1. A recently developed occipital screw system with less instrumentation failure than previously existing systems was used. She fared well and maintained her aligment/posture after the operation and was discharged with outpatient physical therapy.

Craniocervical junction may be affected by many types of disease, such as rheumatoid arthritis, trauma, Down's syndrome, and degenerative arthritis. There is a high risk of neurosurgical complications in this region and only a selected number of cases are being performed annually throughout the United States. We have operated on more than forty patients performing occipitocervical fusion for a variety of reasons. This represents one of the largest series for this type of operation in the country. Every patient had a documented solid, bony fusion, and the majority of patients were able to achieve less pain and became more productive following the operation. ■

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Myelomeningoceles Defects Have Not Declined

Christina Notarianni, MD,
Esther Wylen, MD, Gloria Caldito, PhD,
Anil Nanda, MD, FACS

Folate deficiency is a known cause of neural tube defects (NTD), having devastating neurological outcomes. In 1999, folate supplementation was implemented. We evaluated myelomeningoceles treated at LSUHSC-Shreveport to identify if a decline in defect size and improvement in functional outcome was occurring as these advances in health care emerged.

A retrospective chart review identified all myelomeningoceles, 1980-2005. Data on 25 patients and their mothers was analyzed to determine factors that affect outcomes. Patients born in or after 2000 were compared to those born earlier.

No differences were observed between the patients and their mothers born for the two time periods, and having limited-to-no prenatal care was not a factor. The type of delivery was associated with weight ($p=0.02$) with those born by normal spontaneous vaginal delivery having greater weight. Patients who have neurogenic bladders had more leg deficits than those without ($p=0.03$). A predominance of females were seen (64%), and ventriculoperitoneal shunt placement was noted (76%).

Extended access to free prenatal care and folate supplementation have not changed myelomeningocele defects in 20 years. No decline in myelomeningoceles, nor any change in the severity of defects have been observed.

Mothers who did not receive prenatal care had no difference in the severity of NTD. Patients still have varied outcomes in the size and location of the defects. This data is in correlation with reported outcomes. ■