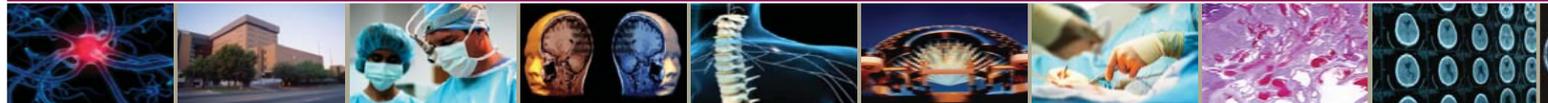




University Neurosurgery

Brain & Spinal Newsletter



Volume 5

Winter 2009

ACGME Approves Residency Training Program

The Department of Neurosurgery at LSUHSC-Shreveport is pleased to announce that our residency training program has been approved by the Accreditation Council for Graduate Medical Education (ACGME) for continued full accreditation with the maximum five-year review cycle.

The evaluation by the review committee verifies the training program's compliance with the nationally established guidelines for education in Neurological Surgery. Our program excels in all areas, including academic productivity, case volume, training facilities, and

compliance with ACGME regulations.

Having previously been awarded a resident complement increase in June 2008, our program recruits and trains two residents per year, making the program the largest in the state of Louisiana and one of the premier places to train in the South.

We believe that our commitment to our patients, our community, and to the advancement in health care is shown through research and enhanced by the addition of bright young minds.

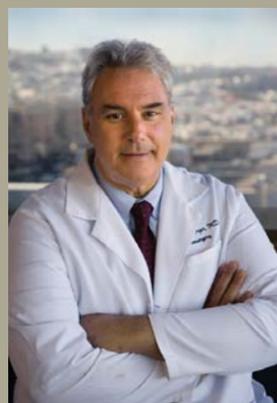
We are very pleased to have passed our

evaluation with the highest marks, reinforcing our commitment to produce outstanding clinicians, active investigators, and experienced educators.



Congratulations to all the department's hard working faculty and staff!

LEVY Conference scheduled for April



Mitch Berger, MD

The Department of Neurosurgery at LSU Health Sciences Center will host the annual Mary Louise and Ben Levy, Jr. Visiting Professorship in Neurosurgery on April 22, 2009.

Mitchel Berger, MD, is the

honored speaker and will give a presentation on "Translational and Therapeutic Advances for Gliomas: Making Steady Progress".

Dr. Berger is the Professor and Chair of the Department of Neurological Surgery at the University of California, San Francisco. He is also the Co-Director of the Adult Brain Tumor Surgery Program, Director of

the Brain Tumor Research Center, and the Director of the Center for Neurological Injury and Repair.

He is a specialist in brain mapping techniques, used to identify areas of motor, sensory, and language function during surgery, and an expert in the use of Gamma Knife tumor treatment. In addition, he has contributed to numerous research projects and publications.

Dr. Berger is a member of several organizations; to name a few are American Association of Cancer Research, Congress of Neurological Surgeons, American Association of Neurological Surgeons, and the American Board of Neurological Surgeons.

For more information please call 318.675.5392 or visit our website at universityneurosurgery.com. ■

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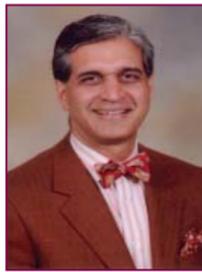
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DEAR COLLEAGUES

Message from the Chairman



LSUHSC-S Staff Members Participate in National Conference

Staff members from the LSU Health Sciences Center at Shreveport participated in two recent conferences sponsored by the National Center for Evaluation of Residency Programs (NCERP) for Administrators and Residency Coordinators.

Jeri Wright, Business and Academic Manager, LSUHSC-S Department of Neurosurgery, delivered several presentations during the 12th Annual Surgery and Surgical Specialties Residency Program Workshop, including a plenary session on the importance of aggregate data, an open session on teaching practice management, and various subspecialty specific tasks.

Also in attendance was Gail Nightengale, Residency Coordinator, LSUHSC-S Department of Surgery, who presented on the General Surgery RC and Board

Requirements, and participated in the specialized surgery workshops.

In addition to the Surgical Residency Program Workshop, Jeri also presented during the NCERP sponsored, 16th Annual Anesthesiology Residency Program. Her three plenary session talks included Aggregate Data, Program Administrator Competencies, and Risk Management/System Based Practice.

The National Center for Evaluation of Residency Programs is an objective, independent, and confidential source of professional information and expertise, assisting program directors and institutions in enhancing residency programs.

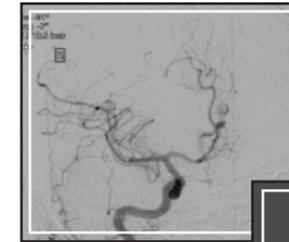
For more information regarding the National Center for Evaluation of Residency Programs, please visit ncerp.com.

Mirror Aneurysms of the Distal Anterior Cerebral Artery

Shashikant Patil, MD

Anil Nanda, MD, FACS

A 41 year old female with an 8 month headache history, was initially evaluated for sinusitis with a contrasted CT head scan. The contrasted CT scan of the head was suspicious for an anterior cerebral artery aneurysm. A cerebral angiogram was performed that showed bilateral distal ACA (DACA) aneurysms. She had no other significant medical or surgical history and her review of systems were positive only for headaches. Surgery was planned electively after discussing the benefits and risks of securing these aneurysms with the patient. Patient was taken for surgery and a bicoronal craniotomy was performed. Using the inter-hemispheric approach, clipping was done in the left and right sided aneurysms through the craniotomy site. Post-operative course was uneventful and patient was discharged home after a few days.



Bilateral DACA aneurysms in mirror locations are extremely rare, and are usually associated with congenital anomalies. Anatomic variations are also common in the DACA aneurysms, and are usually small. They rupture before any mass effect from the aneurysm itself. Ruptured aneurysms usually produce a frontal hematoma apart from the SAH.

Surgical management of DACA aneurysms provides a long-lasting result, with very small rates of re-bleeding. After surviving three years after a DACA aneurysm rupture, the long-term survival of these patients becomes similar to that of the matched general population.

However, clipping of DACA aneurysms can present with many difficulties. There is a narrow interhemispheric space and the callosal cistern is usually small. The falx may be long and deep with dense adherence of the aneurysm to the falx and the cingulated gyri. It may be difficult to get good proximal control as the aneurysm is usually encountered first during the dissection before getting the proximal parent artery. Apart from the SAH itself, the most important factor that affects the mortality and morbidity is the presence of additional aneurysms.

All patients with the DACAS should be thoroughly worked up and evaluated for the presence of additional aneurysms. In our patient the aneurysms were found incidentally before they ruptured. Unruptured aneurysms have a much better overall outcome, especially when both the aneurysms can be approached through a single craniotomy as in this case.

Local Neurosurgeon Wins Resident Award



The Louisiana Neurosurgical Society hosted its 34th annual meeting in New Orleans on Jan. 16-17. The meeting participants included approximately 50 neurosurgeons from Louisiana. Drs. Anil Nanda, Brian Willis and several neurosurgery residents from the Department of Neurosurgery at LSU Health Sciences Center - Shreveport, attended the two-day conference.

Second-year resident of the Department of Neurosurgery Aileen Cangiano-Heath, MD, won the 2009 John Jackson

Resident Award for her presentation "Intracranial Abscess: Is the Current Management Paradigm Still in Accordance with Good Outcomes?" This honor is awarded to the best scientific paper submitted for presentation at the conference.

Other presentations were made by faculty and staff of the Department of Neurosurgery from LSUHSC-Shreveport, including Dr. David Connor, Dr. Christina Notarianni, Dr. Benjamin Brown, Dr. Raul Cardenas and Dr. Cedric Shorter.

Willis, professor and neurosurgeon at LSUHSC-Shreveport, was named the treasurer-secretary for the Louisiana Neurosurgical Society starting in 2011.

University Neurosurgery
Brain & Spinal Newsletter

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Brain & Spinal Newsletter is written for physicians and should be relied upon for medical education purposes only. It does not provide a complete overview of the topics covered, and should not replace the independent judgement of a physician about the appropriateness or risks of a procedure for a given patient.

Shunting Techniques for Hydrocephalus Disorder



Christina
Notarianni, MD

Hydrocephalus is a common pediatric disorder resulting from a mismatch in

cerebrospinal fluid (CSF) production and absorption. This condition encompasses many pediatric diseases including congenital malformations, spinal dysraphism, intraventricular hemorrhages, infections, and tumors. Studies have shown that hydrocephalus, which presents over 15,000 new cases each year, disrupts the overall cytoarchitecture and cytology of cortical neurons. The most injured area is periventricular white matter, with damaged axons and dying oligodendrocytes, needed for myelination of white matter tracts in the developing brain.

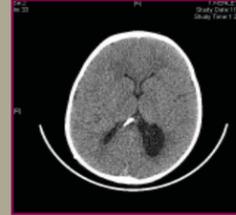
CSF shunting with one-way valve systems has developed into a billion

dollar industry with the continued advancement in valve technologies. Shunts have shown to extend survival and lead to an improved neurological outcome.

The most common shunt is ventriculo-peritoneal. In this procedure a small hole is drilled in the skull and a catheter is inserted into the lateral ventricle of the brain. This catheter is connected to a one-way valve and a distal catheter that is tunneled under the skin to the abdomen. A small incision is made in the abdomen to insert the distal end of the catheter into the peritoneal cavity. CSF is diverted through this shunt and reabsorbed in



the peritoneum. Since shunts can fracture, become blocked or infected, or experience drainage complications, as many as 50% of shunts will need to be revised within



the first year.

An alternative and new procedure for hydrocephalus is endoscopic third ventriculo-

stomy. A small hole is made off the midline in the skull and an endoscope is inserted into the lateral ventricle. After the camera is directed from the lateral ventricle into the third ventricle, a perforation is made through the floor of this structure to allow the ventricular space to communicate with the subarachnoid space in the brain. This provides an alternate route of CSF flow in the brain to reduce hydrocephalus. Furthermore, there is no permanent shunt tubing or foreign bodies which could later become infected or malfunction.

Both procedures typically take under one hour to complete and most patients will go home in one to two days after surgery.

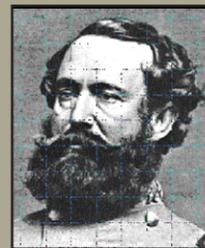
The Confederacy and Surgical Glove Legacy

Anil Nanda, MD, FACS
Professor and Chairman

The Hampton family history begins in the 1700s in upstate South Carolina. Their story continues through the Cherokee Indian raids, Revolutionary War, War of 1812, Civil War, and Reconstruction. The Hampton family is the epitome of Southern grit, pride, and grace.

The most well-known Hampton, Wade Hampton III was a decorated Lieutenant General in the Civil War. He used much of his own wealth to finance a cavalry regiment in support of the South, although he was originally opposed to seceding from the Union. Hampton was wounded five times during the war, yet displayed a cool headed and audacious courage under fire.

In 1890, Wade Hampton III's niece Caroline Hampton, a surgical nurse, married Dr. William Halsted, the father of modern surgery. Dr. Halsted created the surgical glove in deference to Caroline's sensitivity to the scrub-up process and her condition of dermatitis.



Dr. Halsted became enthralled by the beauty of the land in South Carolina, and purchased the Hampton estate from

Caroline's aunts. He renamed the estate "High Hampton," and the couple returned there every summer until their deaths.

"It is not necessary to live too closely to great men. It is better to admire them from afar."

-- Alfred Blalock, MD

LSUHSC - Shreveport competes in 2008 Heart Walk

More than 120 walkers represented LSU Health Sciences Center - Shreveport in the October American Heart Walk at the Bossier City Boardwalk. T-shirt sales and donations helped the LSU team raise more than \$15,000 for the walk, exceeding their \$12,000 goal.

The theme of this year's walk, "Change Tomorrow. Today," was evident when a total of 650 citizens of Northwest Louisiana doubled the profits from last year, taking in over \$100,000, compared to a respectable \$66,000.

The revenue from the Heart Walk, along with other donations, assist the local chapter with community projects, such as \$955,000 in research grants for the Shreveport-Bossier area.

Nicole Smith, Regional Director for the American Heart Association, contributes the growth to aggressively pushing preventive measures, and increased community education.

Across the nation, more than 1.5 million people will participate in this year's Start! Heart walk events. Since the first annual Heart Walk in 1994, participants have raised almost \$600 million for the American Heart Association to support heart and stroke research and public professional education programs.

For more information, call the American Heart Association at 318.677.2483 or visit walk.americanheart.org.



Indocyanine Green Video during Aneurysm Surgery: Utility and Limitations

Bharat Guthikonda, MD
Assistant Professor & Neurosurgeon

Surgical clipping of cerebral aneurysms remains a commonly performed procedure that is, at the same time, thrilling yet fraught with potentially devastating pitfalls. The main goal of aneurysm clipping is to completely occlude blood flow to the aneurysm while maintaining normal patency of the native circulation. Intraoperative confirmation of these two requirements is crucial to avoid either an incompletely clipped aneurysm or inadvertent clip occlusion of a normal vessel.

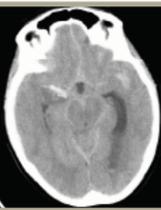


Figure 1

To date, intraoperative angiography (IA) has been the gold standard to evaluate for residual aneurysm or occluded parent vessel. However, IA does have some limitations. There is a small rate of ischemic complications associated with IA. Some medical centers will not have ready access to IA. Some aneurysms, such as those of the posterior inferior cerebellar artery (PICA), require that the patient be placed in the lateral or prone position. IA would be technically challenging in the lateral position and nearly impossible in the prone position. The lack of three dimensional reconstruction capabilities in the operative suite may also lead to missed aneurysm remnants. IA also adds both time and expense to the surgical procedure.

A recent advance in vascular neurosurgery has been the use of indocyanine green video angiography (ICG VA). Indocyanine green is a near-infrared fluorescent dye which can be injected intravenously and circulates only within the intravascular space. Once injected, the field of interest (the aneurysm and surrounding vasculature) is illuminated by a near-infrared light setting incorporated into the neurosurgical microscope developed by Carl Zeiss (Oberkochen, Germany). A special optical filter incorporated in the video angiography setting of Zeiss Pantero microscope excludes ambient light



Figure 2

Continued on page 8

University Neurosurgery's

multidisciplinary team is pleased to serve you and your patients in five locations.

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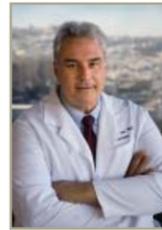
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Upcoming Meetings and Conferences



LEVY Visiting Professorship:

Mitchel Berger, MD
Professor and Chair
Department of Neurological Surgery
University of California San Francisco
April 22, 2009, 10 a.m., LSUHSC-S



Grand Rounds: Neil Kitchen, MD

Associate Clinical Director, Victor Horsley
Department of Neurosurgery
The National Hospital for Neurology and
Neurosurgery - London, UK
May 6, 2009, 4 p.m., LSUHSC-S



Grand Rounds: Timothy Mapstone, MD

Chairman and Residency Program Director
Department of Neurosurgery
University of Oklahoma Health Sciences Center
May 27, 2009, 4 p.m., LSUHSC-S



Grand Rounds: Arnold Menezes, MD

Vice Chairman, Neurosurgery
University of Iowa
College of Medicine
June 24, 2009, 4 p.m., LSUHSC-S



Grand Rounds: Walter Hall, MD

Professor and Chair of Neurosurgery
Upstate Medical University
College of Medicine
Syracuse, NY
August 12, 2009, 4 p.m., LSUHSC-S



Grand Rounds: Daniel Barrow, MD

MBNA-Bowman Professor and Chairman
Department of Neurosurgery
Chief of Neurosurgery Service
Emory University Hospital
Director, Emory MBNA Stroke Center
September 16, 2009, 4 p.m., LSUHSC-S



Grand Rounds: Deborah Benzil, MD

Professor
Department of Neurosurgery/Clinical
Neurosurgery and Cell Biology & Anatomy
New York Medical College
Co-Director
Westchester Spine & Brain Surgery
October 21, 2009, 4 p.m., LSUHSC-S

SPOTLIGHT



Dr. Li, Assistant Professor with the Departments of Neurosurgery and The Department of Physiology received a five year, 1.6 million dollar grant in September from the National Heart, Lung, and Blood Institute and the National Institute of Health.

The grant, which will allow for two postdoctoral/research associates to join the Department of Neurosurgery, will provide funding for research in the development of therapeutic strategies to

prevent and treat vascular disease in humans.

Several preliminary studies were conducted before in preparation for the grant before Dr. Li applied. The new research project is based on the prior studies, and is designed to better understand the mechanisms of restenosis using the well established mouse model of vascular injury and repair.

Dr. Li is the project leader, and will focus laboratory research on the role of inflammation in thrombosis and tissue ischemia/reperfusion injury.

“This grant is very important because it will move the department forward in our cardiovascular disease and stroke research,” stated Dr. Li.

Nanda Honored Guest in Beijing, China and Seoul, Korea

Dr. Anil Nanda was the honored keynote speaker at the 3rd Chinese National Symposium of Skull Base Disease Conference held in Beijing, China October 10-14.

Dr. Nanda presented techniques, video clips of surgeries and case studies as part of his lecture focusing on skull base approaches to aneurysms and skull base complications. He presented clinical lessons learned from his personal series of more than 2,000 skull base and aneurysm cases.

His talks were titled, “Skull Base

Approach to Complex Aneurysms” and “Complications in Skull Base Surgery.”

After his travel to China, Dr.



Nanda was the honored presenter to more than 1200 members of the Korean Neurosurgical Society in Seoul, Korea. His talks were titled, “Skull Base Surgery: Why

the Owl of Minerva flies at Dusk” and “Unbearable Lightness of Honesty in Neurosurgical Complications.”

Dr. Anthony Sin was also in attendance and presented two talks titled, “Step by Step” and “Microsurgical Minimally Invasive TLIF.”

Both societies’ mission is to advance neurosurgery, putting forth dedicated efforts to improve medical practice through specialized education and international academic exchange.

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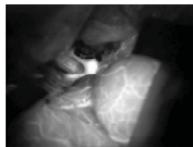


Figure 3

such that only the ICG fluorescence is seen. This allows real time assessment of the completeness of aneurysm clipping as well as patency of the parent vessels. An additional advantage is that both small and large caliber vessels will be seen, thus allowing evaluation of important perforating branches that must be preserved. No side effects at the accepted dosages are described.

We have been using ICG VA at our institution for nearly all aneurysm clippings over the last 6-12 months. We have found it to be easy to use, safe, fast and effective in obtaining our desired information. It has led to clip repositioning on several occasions to more completely secure an aneurysm or to prevent kinking / occlusion of a normal blood vessel.

As with IA, there are some limitations

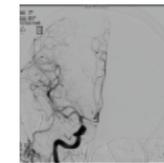
to ICG VA. Unlike IA, ICG VA will not outline vasculature outside of our exposed field. This includes both vessels that are on the “back side” of the aneurysm or undissected vessels that remain covered with cortical tissue. This may be relevant in cases in which the distal portion of the aneurysm clip is outside of the direct microscopic field (i.e, hidden from view by undissected tissue) and may be inadvertently occluding a vessel. In general, however, the clip is placed in such a way that its distal tip can be seen in our field of view. Another limitation is that the video angiography setting is not incorporated into all surgical microscopes. Therefore, use of the Carl Zeiss microscopes is necessary which may be an additional expense.

We have found ICG VA to be an excellent adjunctive tool that is easy to use, fast, inexpensive and full of useful information. We are not ready to

completely replace IA with ICG VA, but feel that it is certainly helpful in making aneurysm surgery safer for our patients.

CASE EXAMPLE:

61 year old female presented to the emergency room with worst headache of her life. She had a history of hypertension. On physical examination, she was arousable but confused. She moved all four extremities to command. CT brain without contrast revealed diffuse subarachnoid hemorrhage (Figure 1). She subsequently underwent CT angiography that revealed a right sided posterior communicating artery aneurysm (Figure 2). She underwent a right fronto-temporal craniotomy for clipping of the ruptured aneurysm. ICG VA was performed after the aneurysm was exposed and again after clipping of the aneurysm (Figure 3). No residual flow is seen in the aneurysm and the normal vessels remain patent. A conventional angiogram was performed on post-operative day 1 (Figure 4) and confirmed successful clipping.



Figure(s) 4

