



Spine neurosurgeons using artificial discs to treat degenerative disc disease

A surgical approach commonly used in combating degenerative knee and hip conditions is now being utilized to successfully treat degenerative disc disease in the spine. Spine surgeons at the University of Pittsburgh are using the Charité™ Artificial Disc to completely replace damaged or worn out spinal discs with a high-tech substitute.

The Charité artificial disc consists of two cobalt chromium alloy endplates sandwiched around a movable high-density plastic core. The design of the disc helps align the spine and preserve its natural ability to move. Extensive clinical tests have shown that the Charité disk allows the patient a full return to flexibility and range of motion.

Lumbar degenerative disc disease, DDD, is a common disorder affecting 10 to 12 million persons. It occurs when spinal discs deteriorate—losing moisture, height and integrity of the tissues—as a result of injury, daily stress or natural aging. This deterioration causes vertebrae to rub against each other, possibly damaging nerve tissues, resulting in pain or numbness.

UPMC ranks among best in country

UPMC ranked 13th in the country in the 2005 *U.S. News & World Report* 'America's Best Hospitals' national survey involving over 6,000 hospitals. The medical center was one of 16 institutions that received 'honor roll' status. UPMC was recognized in 14 of the magazine's 17 specialty care categories including 'neurology/neurosurgery' where UPMC ranked 17th in the nation. UPMC was the only hospital in western Pennsylvania to rank in a specialty. It was also the highest rated hospital in the state. Criteria used in the survey included reputation, patient services and mortality. Information was obtained from numerous sources, most prominently a recent American Hospital Association's survey of its members.

U.S. News

AMERICA'S BEST HOSPITALS

2005

Until now, spinal fusion has been the traditional treatment for DDD. This treatment removes the diseased tissue and "fuses" the motion segments, thereby eliminating the pain source. However, due to the loss of motion in the operative levels of the spine, fusion can cause stress and can also increase motion in adjacent levels, possibly leading to degeneration in these levels.

With the Charité artificial disc procedure, since the damaged disc is removed and replaced with a similarly functioning artificial one, full flexibility and motion is restored and the natural integrity and design of the spine is maintained. Recovery time is significantly quicker as well.

The Charité artificial disc is attached to the vertebral bodies by six fixation teeth on each of the endplates. The teeth achieve fixation and stability without compromising the vertebral body. This mechanism of attachment provides both short and long-term stability and allows for intraoperative repositioning if necessary.

The convex sliding core interacting with the concave side of the endplates allows for the natural translation of motion of the operative segment. This design reduces the shear stresses at the implant/bone surface.

In the procedure, a surgeon approaches the spine through an incision in the abdomen and carefully moves blood vessels and internal organs aside to provide access to the spine. Special tools are then used to remove the damaged disc and create a space between two vertebrae for the implantation of the artificial disc. The procedure generally takes about one to two hours.

Charité is the first artificial disc approved by the Federal Drug Administration to treat patients with single-level DDD at levels L4 to S1. Results from a two-year clinical study of 375 patients show patients implanted



Charité™ Artificial Disc (left) is made of two metallic endplates with six fixation teeth and a movable high-density plastic center; (top) rear view of lumbar spine implanted with Charité. Preclinical testing indicates that the mobile-core design enables independent translation and rotation, key components of physiologic motion. The core moves dorsally during flexion and ventrally during extension.

with the Charité disc improved or maintained their range of motion and experienced less pain compared with spinal fusion patients.

The system includes an extensive range of core heights endplate sizes and endplate angles providing surgeons with numerous options to help ensure proper sizing, placement and segmental lordosis.

In a U.S. clinical trial by Blumenthal, et al, patients treated with the Charite disc experienced improvement in pain and function, maintained motion, and exhibited maintenance of post-operative disc height with a similar safety profile, compared to anterior interbody fusion.

The Charité artificial disc was developed in Germany by orthopedic surgeons Kurt Schellnack and Karin Buttner-Janz. With thousands of implantations since 1987, it has the longest clinical experience of any artificial disc. •

Observations at the end of the academic and fiscal year

The Department of Neurological Surgery at the University of Pittsburgh/UPMC had another record setting year. Our clinical volume exceeded 9,000 surgical procedures with the highest volume being at UPMC Presbyterian. Over 1,000 procedures were performed at UPC Children's Hospital, and we provide clinical care at the VA Medical Center, and UPMC Shadyside as well. Neurosurgery has maintained a very high margin, with a growth rate in work RVU's of 15.6% for the fiscal year, and a total work RVU estimated actual by the end of the fiscal year of 212,165. The average number of work RVU's per neurosurgeon is 9,000, the highest productivity of all clinical services affiliated with the University of Pittsburgh Physicians.

Research productivity has also increased with significant new grants funded and with many new NIH, as well as other non-federal sources continuing to build our research portfolio. We welcome Boyle Cheng, PhD, who has transferred from industry into academics, to help lead the Welch Spine Biomechanics Laboratory.

New clinical faculty have arrived, including Arlan Mintz, MD, from Ontario, whose primary focus will be in the minimally invasive program lead by Amin Kassam, MD, and Michael Horowitz, MD. In addition, Ajith Thomas, MD, will begin a three year instructorship position, with skill acquisition planned in both endoscopic and endovascular surgical procedures.

The department during this year has been re-organized into eight clinical service lines. Currently, these lines include the minimally invasive program headed by Drs. Kassam and Horowitz; their focus centers on minimally invasive, multi-disciplinary skull base, vascular and endovascular activities. The image-guided neurosurgery service headed by myself and Douglas Kondziolka, MD, provide activities related to image-guided brain and spine surgery, stereotactic radiosurgery using

gamma knife, and spinal stereotactic technologies and functional neurosurgery. Peter Gerszten, MD, Kevin Walter, MD, and Ajay Niranjana are important leaders in this activity. The surgical neuro-oncology service is headed by Ian Pollack, MD, with additional activities performed by Drs. Lunsford, Kondziolka, Niranjana and Hideho Okada, MD, PhD. Paola Grandi, PhD, helps to complement our surgical neuro-oncology program, working in innovative viral vectors to enhance brain tumor management. We are delighted that Costas Hadjipanayis, MD, PhD, chief resident, will join our department with a focus on neuro-oncology in 2006 upon completion of his training. Our pediatric service line, headed by Dr. Pollack as chief,

is complemented by A. Leland Albright, MD, and P. David Adelson, MD. We also welcome back Elizabeth Tyler-Kabara, MD, PhD, having completed her fellowship at the University of Alabama in Birmingham.

Our spine service is headed by William Welch, MD, and complemented by Dr. Peter Gerszten, John Moossy, MD, Richard Spiro, MD, and Peter Sheptak,

MD. Community Neurosurgery is performed under the direction of Michael Rutigliano, MD and focused in Westmoreland County. We are actively recruiting for a new associate as we continue to build service delivery in Westmoreland County. The clinical neurophysiology service is headed by Robert Sclabassi, MD, PhD, with major support provided by Jeff Balzer, MD, and Donald Crammond, MD. We are actively looking at hiring additional personnel as we continue to build up this important clinical service that facilitates our brain and spine surgery. We welcome Miguel Habeych, MD, to that program this summer.

Including our Tri-State colleagues, our clinical providers now number 25 neurosurgeons.

(See observations on page 6)



Professors

L. Dade Lunsford, MD
(Chairman)
P. David Adelson, MD
(Vice Chairman, Research)
A. Leland Albright, MD
C. Edward Dixon, PhD
Douglas Kondziolka, MD, MSc
(Vice Chairman, Education)
John J. Moossy, MD
Ian F. Pollack, MD
Robert Sclabassi, MD, PhD
William Welch, MD

Associate Professors

Jeffrey Balzer, PhD
Michael Horowitz, MD
Larry W. Jenkins, PhD
Amin Kassam, MD
Mingui Sun, PhD
Harold B. Weiss, MS, MPH, PhD

Assistant Professors

David Bissonette, PA-C, MBA
(Assistant Chairman/Executive Director)
Eleanor Carson-Walter, PhD
Donald J. Crammond, PhD
Anthony Fabio, PhD
Peter Gerszten, MD, MPH
Glenn Gobbel, DVM, PhD
Ann H. Maitz, MSc
Arlan Mintz, MD
Ajay Niranjana, MCh
Hideho Okada, MD, PhD
Richard Spiro, MD
Elizabeth Tyler-Kabara, MD, PhD
Kevin Walter, MD

Clinical Professors

Adnan A. Abila, MD
Joseph C. Maroon, MD
(Vice Chairman, CMI Division)
Peter Sheptak, MD
(Vice Chairman, Clinical Affairs)

Clinical Associate Professors

Matt El-Kadi, MD, PhD
Daniel A. Wecht, MD

Clinical Assistant Professor

Michael J. Rutigliano, MD, MBA

Research Assistant Professors

Wendy Fellows-Mayle, MA
Ronda Pindzola, PhD

Clinical Associates

Eric Altschuler, MD
Michael Moncman, MD
David Zorub, MD

Clinical Instructor

Ajith Thomas, MD

Research Associates

Yue-Fang Chang, PhD
Xiecheng Ma, MD

Visiting Fellows/Research Associates

Manabu Hatano, MD
Juan José Martin, MD
Kotaro Nakaya, MD
Daniel Prekumar, PhD
Hulya Sirin, MD
Sait Sirin, MD
Margaret S. Wilson, PhD
Hong Qu Yan, PhD

Research and development cornerstone to providing advanced patient care

by Anthony Fabio, RD, MPH, PhD
Assistant Professor of Neurological Surgery

Research is an essential component of developing new medical treatments, but is often only equated with laboratory experiments. Information gained in the laboratory or by testing in animals is called basic science or research. This early stage research only provides preliminary information on how a new treatment will work with patients.

The ideas that succeed in these early tests however, go on to clinical research. Clinical research (also called clinical trials, medical research and research studies) is the scientific approach to answering questions about medical care and treatment. Clinical research is the bridge that links the work initially tested in the laboratory with the medical care eventually offered in the hospitals and other medical facilities that ultimately leads to the changes in how medical care is delivered.

The primary difference between basic (i.e. laboratory) and clinical research is that clinical research involves testing new interventions or treatments in people. An intervention or treatment can be a drug, a device such as a pacemaker, a diagnostic tool, a genetic test, or even a new way to prevent disease or offer support for sick people.

There are several different types of clinical research, with treatment trials and prevention trials being the most common. Treatment trials test new or alternative potential treatments for specific diseases or medical conditions. Prevention trials test new ways to prevent specific diseases, evaluating new medications or lifestyle changes.

Before new treatments or medical procedures are approved for use, federal law requires that they be tested by controlled clinical trials. Experimental drugs at this stage are called investigational new drugs (IND). The Food and Drug Administration (FDA) requires companies to show that new medical products and drugs are *both safe and effective* before approval. Clinical trials are the best way to prove that new medications, practices, or devices are safe and effective.

The controlled clinical trial is considered the gold standard in clinical research,

and several steps should be taken to conduct valid clinical trials: a) Studies should be prospective. Retrospective studies, which rely on data collected after a disease has been diagnosed, are often a first step in clinical research. However, prospective studies allow investigators to measure temporal changes in outcome relative to prior levels of exposure, as well as minimize recall bias; b) Patients who receive a new therapy should be compared to a control group of patients who receive the old therapy or no therapy. If all the patients in a study receive the new therapy, no comparison is possible; c) Randomized trials are the best studies for assessing new treatments. In a randomized trial, a patient's treatment is



The findings of key research conducted by P. David Adelson, MD, were reported in the media across the country and will help develop novel methods for the initial treatment of traumatic brain injury.

determined by the flip of a coin (or something similar). This results in two groups of patients that are equal prior to treatment and allows a valid comparison of the two treatments. Outcomes are then compared between the two groups to see if those in the experimental group do better.

The research division of the Department of Neurological Surgery is committed to developing and testing new treatments for patients with neurosurgical disease through clinical research. The department is one of the top neurosurgery departments in clinical research, ranking second in NIH funding in the United States. It is at the forefront of clinical and transitional research.

With funding from the National Institutes of Health, P. David Adelson, MD, is testing the efficacy of using hypothermia as a treatment for pediatric traumatic brain injury. The study is defining the effect on

neurotransmitter release in response to treatment with hypothermia as well as the age related impact of hypothermia on early and delayed cell death in children. The study is also developing novel methods for the initial and outcome assessment after traumatic brain injury.

Mingui Sun, PhD, with funding from the National Institute for Biomedical Imaging and Bioengineering, is developing computational algorithms to process and integrate video and neurophysiological data acquired during neurosurgery. It is expected that this work will allow neurophysiologists to perform remote neurophysiological intra-operative monitoring through the internet.

Along with C. Edward Dixon, PhD, investigators in the Brain Trauma Research Center are conducting research using in vivo microdialysis and several cerebral blood flow monitoring techniques to define the prevalence of posttraumatic ischemia and test the effect of moderate hypothermia on posttraumatic ischemia. Work is also being done to determine whether hypothermia will lead to measurable brain tissue preservation. This work, along with the center's basic research, is helping to define critical mechanisms of secondary brain injury, determine characteristics of posttraumatic ischemia, and help to establish the efficacy of therapeutic moderate hypothermia.

As part of the Center for Injury Research and Control, Pat Kochanek is investigating whether increased levels of specific biomarkers can be used to identify brain injury in a population of infants at increased risk for inflicted traumatic brain injury. If the approach is successful, it could potentially help in reducing the incidence of misdiagnosis of inflicted traumatic brain injury and ultimately prevent severe or fatal reinjury of these infants.

The University of Pittsburgh Department of Neurological Surgery is dedicated to improving the quality of care and treatments to its patients by providing state-of-the-art care through its work in research and development. Given our commitment to the clinical and research environment, the department expects to continue to be a leader in developing better treatment that will ultimately result in the best care possible. •

A look at the management of complex facial pain syndromes

by Ajay Niranjana, MCh and Douglas Kondziolka MD

There are a number of disabling facial pain syndromes that pose management challenges for physicians and surgeons. While many patients will benefit from medical therapy, selected patients may require consideration of different surgeries. Trigeminal neuralgia is the most common craniofacial pain syndrome of neuropathic origin. It is characterized by quick episodes of jabbing or lancinating face pain. Other less common craniofacial pain syndromes include cluster headache, sphenopalatine neuralgia, geniculate neuralgia, occipital neuralgia, anesthesia dolorosa, paratrigeminal neuralgia of raeder, and atypical facial pain. These ‘other’ pain syndromes may involve burning, aching, dull or crushing sensations. In this article we discuss the management of patients with these less common forms of craniofacial pain.

Cluster Headache

Cluster headache (CH) consists of recurrent brief attacks of sudden, severe, unilateral periorbital pain. Cluster headache often is periodic (30-90 minute) and, primarily localized to the eye, temple, forehead, or cheek region. The headache is usually accompanied by eye watering and nasal drainage, eyelid drooping, pupillary change, and eye congestion/redness. Up to 50% of patients may have tenderness at the base of the skull and neck on the same side as the pain. Unlike migraine and daily chronic headache (DCH), this condition primarily affects men but can be seen in women. Alcohol may provoke an attack. Many cluster headache patients are heavy smokers. Attacks frequently occur during sleep or napping times.

The term “cluster headache” was originally used to describe the clustering or sequence of painful attacks that continue for weeks to months at a time and then spontaneously resolve. It is now recognized that about one-fifth of sufferers develop a chronic form of cluster headache in which recurring attacks, without interim, occur for years at a time. A rare variation of the disease termed cluster-tic syndrome features the primary symptoms of cluster headache but with the added component of stabbing, ice-pick neuralgic-like components involving the eye, face, and jaw. The syndrome is found in 10-20% of patients but is often undiagnosed. True trigeminal neuralgia may coexist with cluster headache.

The attacks can begin at any age, although they usually occur between the ages of 20 and 40 years. A family history of cluster headache is occasionally present (as well as

an increased prevalence of migraine). The pathophysiology of CH remains uncertain. The sphenopalatine ganglion and cavernous sinus are among the sites previously considered potentially important for cluster headache pathogenesis. CH pain is thought to be generated at the level of the pericarotid/cavernous sinus complex. This region receives sympathetic and parasympathetic input from the brain stem, possibly mediating occurrence of autonomic phenomena during an attack. Most recently, PET scanning techniques have revealed the hypothalamic region as important in cluster headache pathogenesis. Its typical periodicity has been attributed to hypothalamic hormonal influences.

Management

The primary treatment strategy is prevention of the attacks. Because of the frequency and brevity of the attacks, symptomatic treatment is not generally the mainstay of therapy and is considered supplemental. Although steroids are reliably effective, the risks must be weighed against the benefits. Other preventive agents are often more appropriate first-line treatments.

Symptomatic treatment

Agents for symptomatic relief include oxygen (100% oxygen inhalation should be administered via a face mask at 7 liters/min for 10-15 minutes at a time, preferably given at the onset of the attack), Dihydroergotamine (nasal spray or parenteral), Sumatriptan (s.c. and nasal spray), Sphenopalatine blockade, Intranasal lidocaine, Indomethacin (rectal suppositories, occasionally effective), and opioids.

Preventive Treatment

Verapamil is a first-line treatment for prevention of cluster headache, although weeks of therapy may be required before control is established. Verapamil must be administered at relatively high dosages to be effective (120-160 mg t.i.d.-q.i.d). Short-acting forms of verapamil are generally more reliable than long-acting forms due to variations in bio-availability. Other agents include Lithium, Methysergide/methylergonovine, Divalproex sodium, chlorpromazine, Transdermal or oral clonidine, ergotamine tartrate, and opioids.

Nerve Blocks and Surgery

In the majority of patients medical therapy is the most effective treatment for cluster headache. However, approximately 10% of patients develop intolerable side effects or severe pain refractory to medications. In such cases a number of surgical procedures may be performed. Sphenopalatine ganglion (SPG) blockade is reported effective in some patients. Though control of an acute attack may be achieved with local application of anesthetic agents, repetitive blocks are not recommended. Various surgical procedures are available, the most popular of which is percutaneous SPG radiofrequency rhizotomy. Microvascular decompression of the trigeminal nerve has also been performed (with or without nervus intermedius section). Gamma Knife radiosurgery of the trigeminal nerve has also been used in selected cases with good effect. This technique carries negligible short- and long-term risk.



Sphenopalatine Neuralgia

Also known as Sluder’s neuralgia, this facial pain disorder is characterized by unilateral headache behind the eye with pain in the upper jaw or soft palate, with occasional aching in the back of the nose, the teeth, the temple, the occiput, or the neck. The pain is associated with nasal and/or sinus congestion, swelling or redness of nasal mucous membranes, tearing and redness of the face. Sphenopalatine neuralgia must be distinguished from cluster headache, although both are characterized by similar symptoms. Sluder’s neuralgia, however, involves pain that is longer in duration, with inflamed nasal mucosa on the involved side. This disorder is more common in women (2:1, women to men) and may be caused by an irritation of the sphenopalatine ganglion from intranasal infection, deformity or scarring. It was more common in the pre-antibiotic era.

Treatment

Medical therapy for sinus decongestion can alleviate symptoms. Ganglion blocks are also effective for pain control, either by intranasal application or direct injection. The underlying cause of Sluder’s neuralgia can also be treated if apparent. Gamma Knife radiosurgery targeting the sphenopalatine ganglion has also been used for pain relief in selected patients with medically intractable sphenopalatine neuralgia.



Geniculate Neuralgia

Geniculate neuralgia (GN), also called nervus intermedius neuralgia, is a rare disorder that usually involves young to middle-age women. GN involves severe pain deep in the ear that may spread to the ear canal, outer ear, mastoid or eye regions. It can also occur in combination with trigeminal or glossopharyngeal neuralgia. The pain is sharp, shooting or burning and can last for hours. Cold, noise, swallowing or touch can trigger the attacks. Geniculate neuralgia may be caused by neurovascular compression of the fifth, ninth and/or tenth cranial nerves. GN may also develop following herpes zoster involving the eardrum or ear (Ramsey Hunt syndrome). This may also be associated with

facial paresis (weakness), tinnitus, vertigo and deafness.

Treatments

GN is a difficult condition to treat with medications. A variety of surgeries have been performed including microvascular decompression of the fifth, ninth, and tenth nerves, as well as partial cutting of the nervus intermedius, geniculate ganglion, chorda tympani and/or the ninth and tenth cranial nerves.

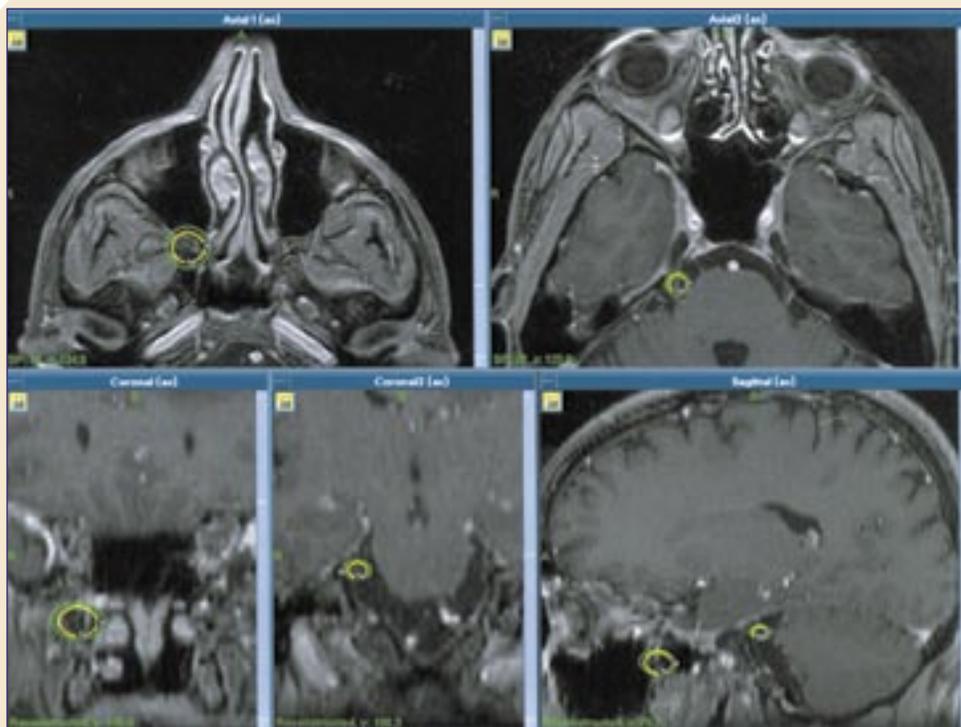
Occipital Neuralgia

Occipital neuralgia (ON) is characterized by unilateral jabbing pain involving the distribution of the occipital nerve (radiating from the neck to the back of the head). The pain may also radiate to the forehead and eye, with some possible nerve tenderness and numbness in the affected area. ON is typically caused by acute or chronic trauma, entrapment, or inflammation at any point along the course of the C2 and C3 nerves. Occipital neuralgia is similar to glossopharyngeal, trigeminal, and geniculate neuralgias, but is differentiated according to the location of pain.

Treatments

Carbamazepine or Neurontin can reduce occipital neuralgia pain. Injections of local

(See management on page 6)



Gamma Knife radiosurgery plan for a patient with intractable right sided cluster headache. Radio-surgery was performed to both the right sphenopalatine ganglia and the right trigeminal nerve in a single session. The gamma plan shows the 50% isodose line covering the sphenopalatine ganglia (top left) and the trigeminal nerve (top right) in axial contrast enhanced images with coronal (bottom left and center) and sagittal reformations (bottom right).

The management of complex facial pain syndromes

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anesthetic (diagnostic blocks) may provide temporary relief. For medically refractory pain, a variety of nerve ablation procedures may be performed. These include C2 ganglionectomy by surgery or radiofrequency lesions, peripheral neurectomy, and intradural rhizotomy. Microvascular decompression of the C2 root and ganglion at the neural foramen has been performed. Good long-term pain relief can be achieved with ventrolateral partial rhizotomy of the posterior rootlets of C1, C2 and C3. It is a potentially curative procedure. Occipital nerve stimulation has also been performed with good pain relief.



Atypical Facial Pain

Atypical facial pain (or idiopathic facial pain) is characterized by deep, aching, constant, pulling or crushing pain that involves diffuse areas of the face and head. The pain fluctuates in intensity and severity and is often worse at night, and may be aggravated by activity. In the majority of cases, only one side of the face is affected, but pain on both sides is also possible. The symptoms may initially appear similar to trigeminal neuralgia, in the beginning but progress to an atypical facial pain pattern. The diagnosis is made when the origin of pain is undetermined or when symptoms do not correlate with any other facial pain syndrome.

Treatments

Atypical facial pain is typically a difficult condition to treat. Tricyclic antidepressant medications can provide sufferers with mod-

est relief of their symptoms. Conventional analgesic drugs, including opioids, can also be effective in selected individuals, often under the direction of a comprehensive pain management program. Surgery is generally avoided. While radiofrequency rhizotomy has been performed, such destructive interventions may actually worsen the pain.



Anesthesia Dolorosa

The term anesthesia dolorosa describes a painful area of numbness that may develop following injury to the trigeminal nerve (commonly from ablative interventions for trigeminal neuralgia). This pain is constant and is described as burning, gnawing, or stinging.

Treatments

Treatment is often ineffective, and refractory to medications. Surgical interventions that have been tried with limited success include focal brain stem ablation (tractotomy of the nucleus caudalis), deep brain stimulation and pre-motor cortex stimulation. In general, additional destructive interventions are not effective. •

Observations at the end of the academic, fiscal year

(continued from page 2)

Our research program is complemented by approximately 12 PhDs. This will be a hard year to duplicate in many ways. From a clinical, educational and research productivity standpoint, our department has few peers. Also, it is important that we recognize the enormous contributions provided by the residents as well as the residents enormously important contribution to our clinical program during their training.

Finally, we would like to welcome Dean Kostov, MD, Richard Singleton, MD, and Hilal Kanaan, MD as they begin their neurosurgical training in PGY-2 levels, and Pawel Oschalski, MD, Nestor Tomycz, MD, and Matthew Maserati, MD, as they begin their PGY-1 experience at the University of Pittsburgh Medical Center. •

L. Dade Lunsford, MD, FACS

Lars Leksell Professor

Chairman, Department of Neurological Surgery

Recent donations to the department

Children's Neurosurgery Chair

• Up to \$1,000:

United Way of Allegheny County

General Fund:

• \$10,000 - \$15,000:

The Pittsburgh Foundation

• Up to \$1,000:

Mr. & Mrs. Stephen G. Noon

Ms. Lois M. Branch

Mr. & Mrs. Gary P. Rozema

Mr. & Mrs. Alfred H. Speers

Mr. Henry A. Senf

Lars Leksell Fund

• Up to \$1,000:

Mr. & Mrs. Eugene Epstein

Mr. & Mrs. Robert T. Cashion

Pediatric Neurotrauma Fund

• Up to \$1,000:

Mr. Stanley J Augustine

Mrs. Viola A. Augustine

Irene C. Baird, EdD

Ms. Sally J. Bayler

Mr. & Mrs. Ray Chernikovich

Mr. Gregory Clemens

Mr. & Mrs. John N. Colberg

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Richard M. Fencel, M.D.

Mr. & Mrs. Dino Frattaroli

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Ms. Barbara Haas

Mr. & Mrs. John E. Hepschmidt, Jr.

Ms. Betty C. Hungerford

Mr. & Mrs. Conrad E. Kambic

Mr. & Mrs. William L. Kepler

Mr. Paul Morigi

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Mr. & Mrs. Thomas W. Muriceak

Ms. Joyce M. Rohrer

Mr. David Carroll Scholl

Mrs. Dorothy J. Scholl

Ms. Lillian Shalkowski

Mr. & Mrs. Donald E. Slike

Mr. Robert J. Steele

Mrs. Shirley L. Steele

Mr. & Mrs. Charles J. Taylor

Mrs. Joan Clark Trach

Mr. John Paul Trach

Theodore A. Tristan, MD

Mrs. Jill A. Yarasheski

Mr. Kevin E. Yarasheski

Peter E. Sheptak Chair

• Up to \$1,000:

Mrs. Christy Hofmann

Mr. Robert G. Hofmann II

Congratulations to graduating chiefs



The Department of Neurological Surgery at the University of Pittsburgh is proud to offer congratulations to its 2005 graduating chief residents, Drs. John Y.K. Lee and Anthony Harris (above). The two were honored in a formal ceremony at the Fox Chapel Golf Club June 25 attended by faculty members, family and friends.

Media

• Findings of a phase II clinical trial headed by **P. David Adelson, MD**, investigating induced hypothermia in children, generated widespread national media interest. The study, reported in the April issue of *Neurosurgery*, examined 75 children with head injuries and concluded that inducing hypothermia reduced the dangerous brain swelling that accompanies these injuries—and indicated there were signs that it may also help the youngsters' cognitive function. The findings were reported in the *New York Times*, *Washington Post*, *Los Angeles Times*, *Newsday*, *Miami Herald* and *San Francisco Chronicle* among other publications across the country. Dr. Adelson was also interviewed on several television and radio stations.

• The groundbreaking surgical technique of performing brain surgery through the nose pioneered by **Amin Kassam, MD**, and **Carl Snyderman, MD**, was featured on NBC-TV's *Nightly News*, Tuesday, June 21. The procedure, dubbed the 'Expanded Endonasal Approach' (EEA), was part of a week-long series the network produced showcasing new frontiers in medicine.

New Research Grants

• "Mechanisms of Chronic Dysfunction after Brain Trauma." This project will test the overall hypothesis that persistent functional deficits following traumatic brain injury may be, at least partially, attenuated by adenosine A2A receptor modulation of dopamine D2 receptor function. **C. Edward Dixon, PhD**, NIH, National Institute of Neurological Disorders and Stroke, \$1,364,652.

• "Cytokine Gene Therapy for Cancer." Project grant to evaluate dendritic cells genetically engineered to express cytokines in preclinical cancer models. **Hideho Okada, MD, PhD**, NIH/National Cancer Institute, \$621,961.

• "Type-1 Dendritic Cells in the Treatment Recurrent Malignant Gliomas." One of the first molecularly targeted vaccine trial for patients with malignant glioma. **Dr. Okada**, NCI/NINDS.

Invited Lectures

• **A. Leland Albright, MD**, VI Congress of the Brazilian Pediatric Neurosurgical Society, Bela Horizonte, Brazil, April 21-23.

• **Peter C. Gerszten, MD**, Cornell University's Department of Neurosurgery and Memorial Sloan Kettering Cancer Center in New York on April 25.

• **L. Dade Lunsford, MD**, 10th anniversary celebration of the installation of the first Gamma Knife in Mexico, Guadalajara, May 5-7.

• **Dr. Gerszten**, Total Patient Care for Brain and Spine Cancer Symposium, Henry Ford Neuroscience Institute, Detroit, May 11.

• **Dr. Adelson**, Pediatric Academic Society's Annual Meeting, Washington, DC, May 14.

• **William Welch, MD**, Wuxi International Symposium in Spine Surgery, Wuxi, China, May 19.

• **Dr. Adelson**, 1st Birth Injury and Brachial Plexus Palsy Symposium, Baltimore, May 23.

Promotion

• **Adnan A. Abl, MD**, was promoted to Clinical Professor at the University of Pittsburgh.

Announcements

• **Ian Pollack, MD**, was inducted into the American Society for Clinical Investigation, an honor society for clinician-scientists. The induction, the first for a neurosurgeon, requires a sustained pattern of meritorious research in the health sciences among investigators younger than 45 years of age.

• **Alexis Ferencz** passed the American Academy of Professional Coders exam and is now a Certified Professional Coder.

• **Constantinos Hadjipanayis, MD, PhD**, received his PhD in Biochemistry and Molecular Genetics from the University of Pittsburgh. His thesis was "Radiosensitivity Enhancement of Human Glioblastoma Multiforme by a Herpes Simplex Virus Vector."

Belated Announcement

• **Wendy Fellows Mayle, PhD**, received her PhD in Physical Anthropology at the University of Pittsburgh. Her dissertation was entitled "Cranial Content Changes in Craniosynostotic Rabbits."

Personal Congratulations

• Baby girl (Julianna Elizabeth, March 23) to **Tricia Kelly**, administrative assistant to Drs. Gerszten and John J. Moossy, and husband Tom; baby girl (Carla, June 21) to **Julie Genevro, Dr.** Horowitz nurse coordinator and husband Tom; **Kristen Kartychak**, pediatric neurosurgery physician assistant, was married to Roy Thompson on May 28.

Welcome

Arlan Mintz, MD, minimally invasive program; **Paola Grandi, PhD**, surgical neuro-oncology program; **Monique Critten**, administrative secretary to Drs. Amin Kassam and Michael Horowitz; **Michael Kopke, PA** for Drs. Kassam and Horowitz; **Jamie Huntley**, senior administrative assistant to Drs. Horowitz and Richard Spiro; **Patricia Pavlovich**, administrative assistant to Dr. Lunsford; **Kathy Harshman, RN**, nurse coordinator to Dr. Dixon; **Desiree Doyle**, RFT Operations Manager.

Upcoming Events

• September 13: **CIRCL Web Seminar**, "Using Safety Lit," David Lawrence, MPH, Director, Center for Injury Prevention, Policy & Practice, Graduate School of Public Health, San Diego State University, 2:00 p.m., www.circl.pitt.edu.

• September 15: **CIRCL Web Seminar**, "Narrative Analysis in Injury Research," Gordon Smith, MD, MPH, Liberty Mutual Research Institute for Safety, Hopkinton, MA, 2:00 p.m., www.circl.pitt.edu.

• September 19-21: **Gamma Knife Radiosurgery Training Nurses**. Training course directed at nurses and other allied health care personnel interested in providing clinical care for patients undergoing Gamma Knife radiosurgery. (412) 647-6250.

• September 26-30: **Principles and Practice of Gamma Knife Radiosurgery**. Training course targeted at neurosurgeons, radiation oncologists and medical physicists interested in Gamma Knife radiosurgery confirmation. (412) 647-6250.

• September 29 - October 5: **World Congress for Endoscopic Surgery**. Meetings and courses for neurosurgeons, otolaryngologists, and other physicians interested in learning and discussing minimally invasive surgery of the brain, skull base and spine. David L. Lawrence Convention Center, Pittsburgh, (412) 243-5156. •



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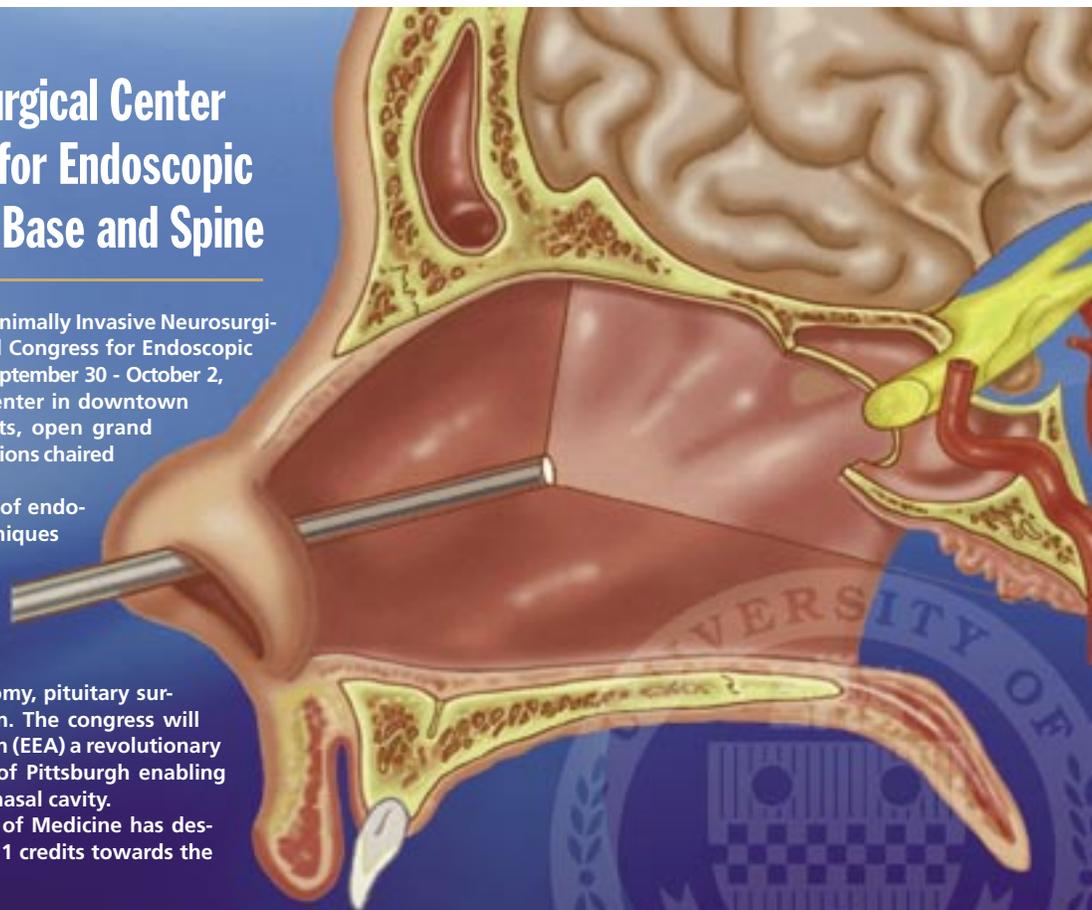
(see www.neurosurgery.pitt.edu for more details)

Minimally Invasive Neurosurgical Center cohosting World Congress for Endoscopic Surgery of the Brain, Skull Base and Spine

The Department of Neurological Surgery's Minimally Invasive Neurosurgical Center is cohosting the first ever World Congress for Endoscopic Surgery of the Brain, Skull Base and Spine, September 30 - October 2, 2005 at the David L. Lawrence Convention Center in downtown Pittsburgh. The congress will include exhibits, open grand rounds, video demonstrations and panel discussions chaired by internationally-known experts.

Discussions will center on principles of endoscopic surgery, novel endoscopic surgical techniques and future directions of minimally invasive surgery in the field. Experts from around the world will gather to share their expertise and present on a wide variety of topics including malignant tumors, vascular lesions, image-guided surgery, surgical anatomy, pituitary surgery, reconstruction and new instrumentation. The congress will also address the Expanded Endonasal Approach (EEA) a revolutionary new procedure developed at the University of Pittsburgh enabling surgeons to access brain tumors through the nasal cavity.

The University of Pittsburgh School of Medicine has designated this educational activity for Category 1 credits towards the AMA Physician's Recognition Award.



For more information on the congress visit www.neurosurgery.pitt.edu/cranialbase/endoscopic_congress.html