Neurotransmitter

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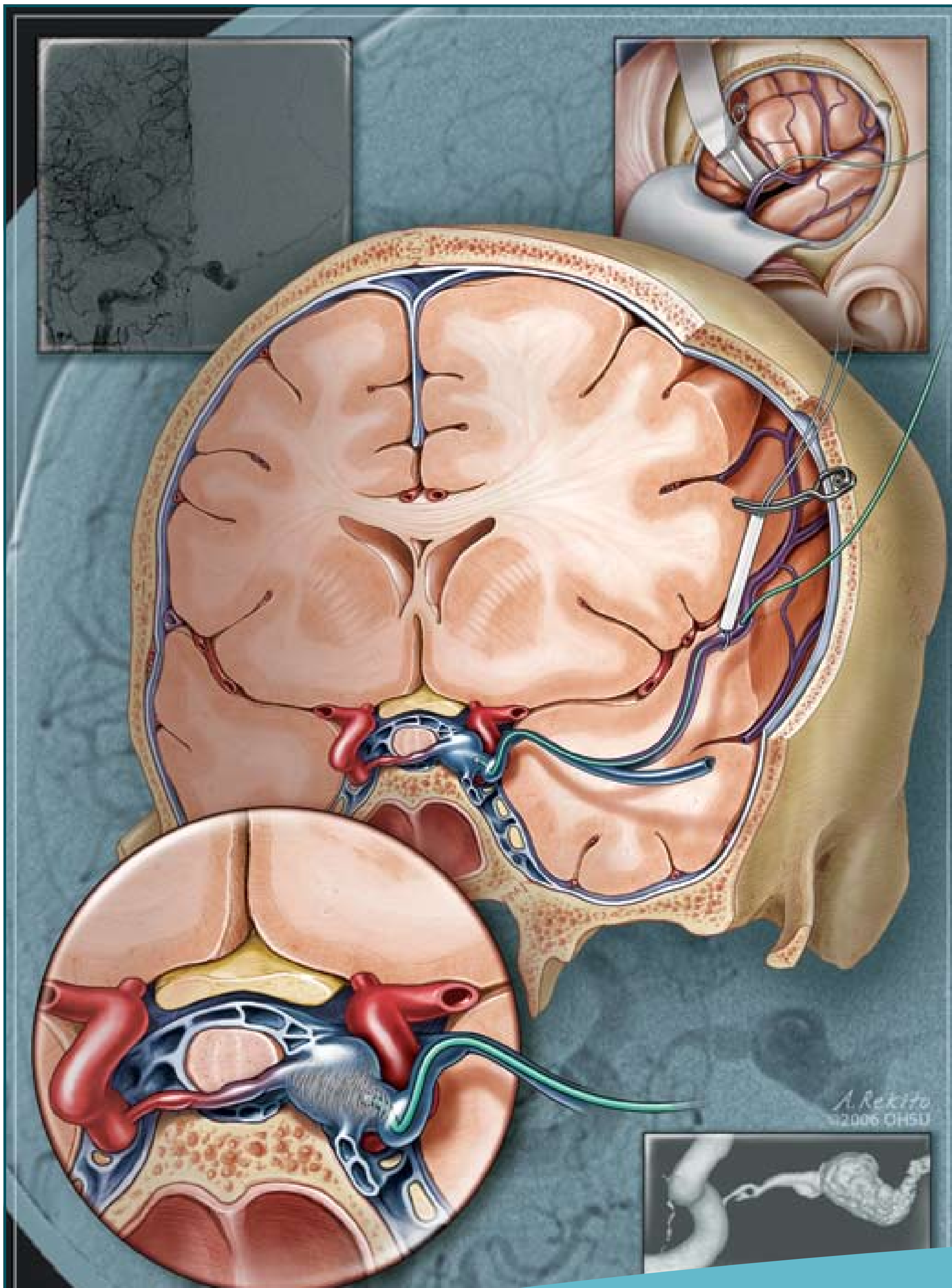
Introduction

Clinical Features

Department News



Cover Illustration: Combined open surgical and endovascular transvenous embolization of carotid cavernous fistula, Ellegala *et. al.*

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Jorgé L. Eller, M.D.
Dilan Ellegala, M.D.
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Maria Fleseriu, M.D.

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Richard Kolbell, Ph.D., A.B.P.P.

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Shirley McCartney, Ph.D.
Andy Rekito, M.S.

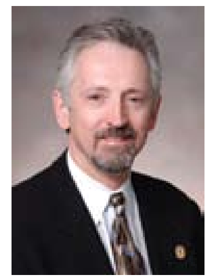
Chairman's Update

These are truly exciting times at OHSU! As you can see from the photographs below, the Peter O. Kohler Pavilion is now open. With that comes a new home for neurosurgery inpatients on the 10th floor, and new operating rooms and support areas on the 5th and 6th floors. On behalf of all surgeons at OHSU: Thank you, OHSU! We now are practicing in an absolutely state-of-the-art facility, complete with the best patient amenities you will see in a hospital anywhere. This is only the beginning of a sweeping change at OHSU.

For starters, we now have a new OHSU president, former dean of the School of Medicine, **Joseph E. Robertson, Jr., M.D., M.B.A.,** and the new interim dean of the School of Medicine, **Mark A. Richardson, M.D., M.Sc.D., M.B.A.** These two talented and dedicated individuals are certainly leading the way toward the pursuit of excellence in our traditional missions of teaching and discovery. Moreover, there is now an invigorated institutional commitment to push the culture of OHSU even further in the direction of service excellence in our patient care mission.

This fall, neurology and neurological surgery will open a new dedicated neuroscience intensive care unit (Neuro-ICU) under the direction of Anish Bhardwaj, M.D., and his team. In November, the entire neurological surgery department migrates to our new home, the Center for Health and Healing (CHH) at South Waterfront. In the near future, our patients will have the convenience of parking and easy access to our outpatient clinics! What will certainly become a Portland landmark, the Tram will open in January 2007, connecting the CHH with our inpatient home base on the hill.

This year, I enter my 18th year at OHSU. I have seen many changes during those years, but none on a par of what is happening all around me today. It is a great time to be part of this outstanding institution!

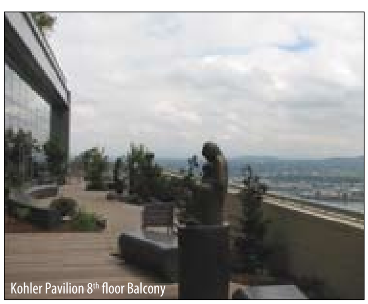


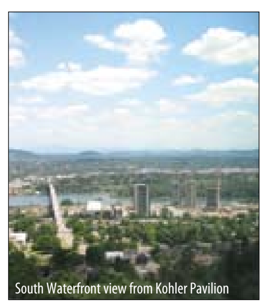
Kim J. Burchiel, M.D. , F.A.C.S.
John Raaf Professor and Chairman
OHSU Neurological Surgery


Kohler Pavilion 10th floor Neuro/ENT Wing

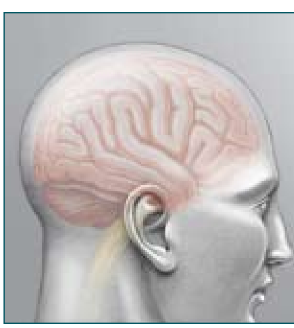

City and river view from Kohler Pavilion


Kohler Pavilion 9th floor Main Lobby


Kohler Pavilion 8th floor Balcony


South Waterfront view from Kohler Pavilion


Kohler Pavilion 9th floor Balcony



OHSU Neurotransmitter is published by the Department of Neurological Surgery, Oregon Health & Science University, School of Medicine, for colleagues, alumni and friends of the department.

For inquiries, submissions or suggestions, please contact Shirley McCartney, Ph.D., at 503 494 -7469 or (mccartns@ohsu.edu). Learn more about our department on the Web at www.ohsu.edu/neurosurgery.

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Contributors: Kim J. Burchiel, M.D., Anish Bhardwaj, M.D., Dilantha Ellegala, M.D., and Shirley McCartney, Ph.D.

Neurosciences Critical Care Program at OHSU by Anish Bhardwaj, M.D.

I joined the OHSU School of Medicine to develop and implement the neurosciences critical care program in January, 2006. As program director and neurointensivist, my goal is to bring together clinical faculty whose responsibilities include management of critically ill neurological and neurosurgical patients at OHSU including those patients with: acute ischemic and hemorrhagic strokes; subarachnoid hemorrhage; brain tumors, brain and spinal cord traumatic injury; neuromuscular disorders; and status epilepticus. The goal of a neurointensivist-led team model is to provide positive impact on patient outcomes, including lower intensive care unit mortality, length of stay, and discharge to a skilled nursing facility and a higher discharge home rate. In additon to my role as program director, my laboratory research, which has been funded over the past decade by the National Institutes of Neurological Disease and Stroke and the American Heart Association focuses on translational research in acute brain injury. The essential elements of the neurosciences critical care program are outlined below.

- The overriding goal of the neurosciences critical care program is to establish an academic program (patient care, teaching and research) in acute neurosciences and develop a state-of-the-art acute neurosciences unit dedicated to the specialized high-quality primary and tertiary care for critically ill neurological and neurosurgical patients.
- Establishing and implementing a well-integrated and cohesive multidisciplinary approach in acute neurosciences critical care that entails joint support from the departments of Neurology, Neurological Surgery, Anesthesiology and Peri-Operative Medicine, and Diagnostic Radiology. Faculty members in the program are fully trained neurointensivists and critical care physicians from the departments of Neurology, and Anesthesiology and Peri-Operative Medicine, Division of Pulmonary and Critical Care Medicine.
- The patient population in the acute neurosciences unit will include those with subarachnoid hemorrhage, patients undergoing elective vascular surgery, post-operative care of patients with brain tumors, spine surgery patients and any patient requiring continuous neuromonitoring for the assessment and management of elevated intracranial pressure. Neurological patients will include those who have had ischemic strokes following systemic or local thrombolytic therapy or selective angioplasty, large hemispheric infarctions requiring continuous neuromonitoring, intraparenchymal and intraventricular hemorrhages, status epilepticus, encephalopathies, meningitis, encephaliditis, neuromuscular disorders in crisis (myasthenia gravis, Gulliain-Barre syndrome) and acute myelopathies. A step-wise expansion plan over the next five years, depending on need and dictated by patient census/bed occupancy, will be developed.
- Developing a referral base from surrounding private and city hospitals for the specialized care of patients requiring acute neurological and neurosurgical critical care with teaching and outreach programs for regional emergency room physicians, internists, general neurologists, emergency medical team personnel, and to enhance response time in thrombolytic therapy for ischemic strokes and other acute brain injuries.
- Developing outreach programs for stroke/acute brain injury awareness to affiliate hospitals and other primary and secondary regional medical care centers through invited lectures and seminars.
- Continued participation in ongoing, multi-center clinical trials funded by the National Institutes of Health, pharmaceutical companies and the institutional General Clinical Research Center and the Department of Medical Informatics and Clinical Epidemiology for outcomes research. Themes will include neuromonitoring techniques, neuroprotective agents in ischemic brain injury and other therapeutic strategies in ameliorating brain injury.
- Education and training: The overall goal is to implement a two-year combined clinical and research fellowship training program to develop clinician-scientists in the field of neurocritical care who will eventually become leaders in the field. Residents from the departments of Neurology, Neurological Surgery, Anesthesiology and Peri-Operative Medicine, Division of Pulmonary and Critical Care Medicine, and Emergency Medicine will have structured curriculum during their rotations in the neuroscience intensive care unit. Nursing education and training of physician assistants will be an integral part of the program.
- The acute neurosciences program will provide a consultation service to the entire in-patient service including the Emergency Department, other ICUs and general wards with the creation of an "Acute Brain Injury Response Team" at OHSU.

The Harold D. Paxton International Professorship

A Bridge to Worldwide Neurosurgical Education — September 6-13, 2006

The OHSU Department of Neurological Surgery was pleased to welcome **Professor Yucel Kanpolat** to OHSU as the first Harold D. Paxton International Professor.

Professor Kanpolat completed his medical degree and residency training at Ankara University School of Medicine, Ankara, Turkey. He joined the Department of Neurosurgery, Ankara University School of Medicine, as an assistant professor in 1975. A full professor in the Department of Neurosurgery, Ankara University School of Medicine, since 1989, Professor Kanpolat's interests include: functional and stereotactic neurosurgery; surgery to treat pain; movement disorders; pontocerebellar angle surgery (microvascular decompression); and the history of science and philosophy.

In a neurosurgical career that has spanned 30 years, Professor Kanpolat has become a highly respected physician, educator and innovator of neurosurgical techniques. Professor Kanpolat has published extensively and traveled widely as an international guest speaker in Europe, Asia, and the Americas, teaching and disseminating neurosurgical knowledge. He is a member of numerous international neurosurgical federations, associations and committees, and is an associate editor for *Surgical Neurology*.

It was an honor to welcome an international academic neurosurgeon such as Professor Kanpolat to OHSU.

Cerebral Aneurysms by Dilantha Ellegalla, M.D. and Arthur L. Day, M.D.

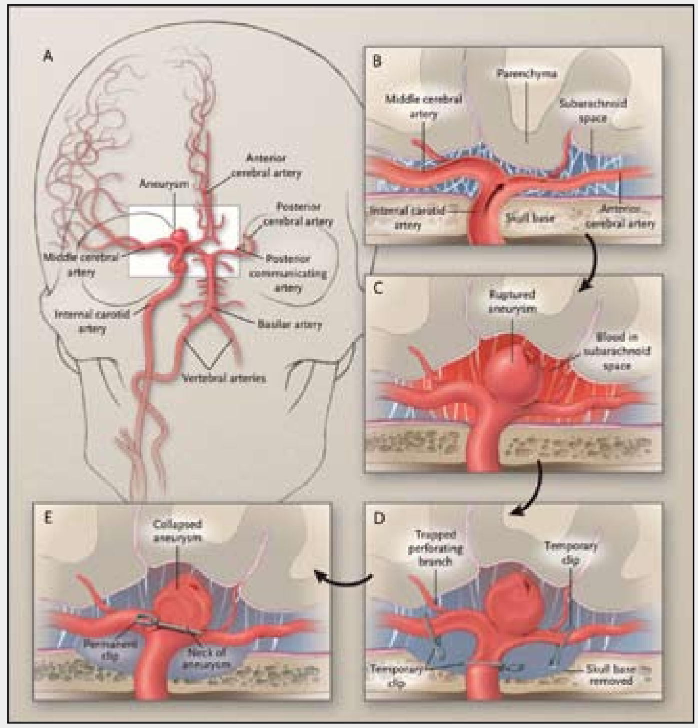
The brain derives its blood supply from two internal carotid arteries, which supply most of the cerebrum, and two vertebral arteries, which merge to form the basilar artery and supply the brain stem, the cerebellum, and the visual cortex of the cerebrum. These vessels shed most of their external supporting layers as they enter the skull and are therefore considerably thinner and more fragile than vessels elsewhere in the body. On penetrating the dura mater, each vessel traverses the subarachnoid space at the base of the skull, where communications are established between the major trunks to form the circle of Willis (see diagram). The hemodynamic stresses (high pressure and pulsations) on the distal wall between the two exiting branches can weaken that region and, over time, lead to the formation of saccular (berry) aneurysms. Once established, these aneurysms carry a risk of rupture that varies with their location, size, and wall thickness.

A ruptured cerebral aneurysm is an intracranial catastrophe, associated with very high morbidity and mortality. When an aneurysm ruptures, blood spurts into the subarachnoid space under arterial pressure, continuing until increased local or generalized intracranial pressure stops the bleeding. Acute hydrocephlus may develop as the blood fills the subarachnoid space and impedes the normal flow and absorption of cerebrospinal fluid. Focal clot formation or parenchymal edema and irritation can disturb the regulation of cardiac or respiratory function or further increase the intracranial pressure, culminating in death. Aneurysmal subarachnoid hemorrhage is associated with mortality rates between 25 and 50 percent from the consequences of the initial bleeding. Half of untreated survivors have an additional bleeding episode at least once within the next six months, and among such patients, morbidity and mortality are even higher.[1] Even with aggressive modern treatment, good neurologic function is restored in less than one third of all affected patients.

If the patient survives the immediate effects of the bleeding episode and reaches a medical facility alive, the initial management must be directed toward stabilizing or reversing acute life-threatening conditions, including tissue hypoxia from seizures or respiratory depression, cardiovascular dysfunction, hydrocephalus, and focal intracranial clots. Particularly in obtunded patients, the establishment of an airway and urgent ventriculostomy with drainage of cerebrospinal fluid can be lifesaving, since these procedures reduce the effects of brain hypoxia, acute hydrocephalus, and increased intracranial pressure.

Once the patient's condition has stabilized, the primary focus of treatment becomes the prevention of rebleeding. The cause and site of the subarachnoid hemorrhage are determined by means of some form of arteriography. The best method of obliterating the aneurysm is then selected and implemented, usually within 24 hours after presentation, unless a life-threatening clot necessitates emergency surgical evacuation. The selection of the appropriate treatment — either open surgery (clipping) or an endovascular approach (coiling) — is based primarily on the age and clinical status of the patient and the size, shape, and location of the aneurysm; the decision is best made by a team that is proficient in both methods.

Operative clipping is a definitive technique for securing most ruptured aneurysms. During surgery, an opening in the skull is created (craniotomy), the dura mater is opened, and the subarachnoid space is dissected to separate the lobes of the brain and also to take advantage of naturally occurring corridors in order to reach an aneurysm arising near the base of the skull. In the process, the brain must be manipulated in a gentle way so as not to create additional risks for the already irritable or injured organ. Methods that reduce the brain's volume (the use of osmotic agents and the drainage of cerebrospinal fluid) and techniques



Surgical Repair of Aneurysm Causing Subarachnoid Hemorrhage.

The anatomy of the subarachnoid space and the circle of Willis is shown in Panels A and B. A major artery (the internal carotid artery) enters the skull from below and then follows a course through the subarachnoid space, giving off penetrating branches that supply the parenchyma. High pulsatile pressure on branching points of the proximal artery (arrow, Panel B) just after the arterial wall sheds much of its supporting adventitia can promote the formation of saccular aneurysms in susceptible persons. In such cases (Panel C), an aneurysm forms at the branch point of an artery, where the arterial pulsation stress is maximal. Most lesions remain silent until rupture occurs, at which time blood is rapidly released into the subarachnoid space, leading to early effects such as parenchymal irritation, edema, and hydrocephalus and delayed effects such as vasospasm. During surgical repair of such an aneurysm (Panel D), temporary clips can be placed on the proximal feeding artery alone, or they can be placed on both the proximal and distal arteries in order to "trap" the segment harboring the aneurysm. Both methods reduce flow within the regional segment. Trapping, however, provides complete cessation of flow, and any tissue supplied by an end artery in the trapped segment is particularly susceptible to ischemic consequences. Lowering the brain's metabolic demands can extend the interval of tolerance of the flow interruption, providing more time for the surgeon to accurately secure the aneurysm. Removal of the skull base provides improved access and operative exposure for the surgeon without the need for substantial brain retraction. Once the exposure is complete (Panel E), a permanent clip is placed on the neck of the aneurysm, effectively excluding it from arterial circulation. The aneurysm is then collapsed, and the field inspected to make sure no branches are compromised by the clip placement. The inner wall of the aneurysm base is approximated by the clip, generally providing a lifelong cure of the lesion.

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The 16th Annual John Raaf Day

Management of Malignant Glioma and Pituitary Tumors - September 30, 2006

The OHSU Department of Neurological Surgery was pleased to welcome **Edward R. Laws Jr., M.D.** to OHSU as the 16th John Raaf Day Lecturer. Dr. Laws has been a professor of neurological surgery, and clinical internal medicine and pediatrics at University of Virginia, Charlottesville since 1992. He earned a medical degree and completed neurosurgery residency training at Johns Hopkins University School of Medicine where research work in brain tumor cytochemistry and epilepsy physiology was part of the program and clinical work focused on the development of microsurgical concepts and transsphenoidal pituitary surgery. An initial faculty appointment at Johns Hopkins in 1971, with responsibility for pediatric neurosurgery, was followed by a move to the Mayo Clinic in September 1972. In 1987, Dr. Laws was appointed chairman of the Department of Neurological Surgery at the George Washington University Medical Center. His efforts there culminated in the development of the George Washington Neurological Institute. In 1992, he moved to the University of Virginia where he is the W. Gayle Crutchfield Professor of Neurosurgery. With the collaboration of colleagues from endocrinology, a Neuroendocrine Unit was developed at the University of Virginia that fully integrates molecular biology, clinical and laboratory endocrinology, and neuroendocrine surgery.

He serves on the editorial boards of most major specialty journals, has served as co-editor on 12 books, authored or co-authored more than 130 book chapters, and contributed more than 300 abstracts and editorials. His primary research and clinical interests include: neurooncology, neuroendocrinology, pituitary surgery, epilepsy surgery and peripheral nerve surgery.

Cerebral Aneurysms *continued...*

that minimize brain retraction (the release of arachnoid membranes and the removal of bone from the skull base) facilitate the exposure of a broad area of the brain while minimizing trauma.

Once exposure is complete, the aneurysm is dissected from adjacent branches and obliterated with the placement of a titanium clip across the origin (or neck) of the aneurysm. The operative manipulation of a recently ruptured aneurysm, however, is not without substantial hazards and technical obstacles. The ability to visualize and control blood flow within the entering and exiting branches is crucial, especially in the event of premature intraoperative rupture of the aneurysm before dissection and anatomical clarification have been completed. Temporary clips may be placed on the proximal feeding vessel alone or also on the exiting branches (a technique called trapping), providing focal circulatory arrest in the vessels adjacent to the aneurysm; this vital adjunct technique is often used in the final stages of the dissection and clipping. Temporary clipping reduces the flow of blood into the aneurysm, makes it softer and less pulsatile, allows for easier and safer manipulation of the aneurysm during permanent clip placement, and controls bleeding in the event of premature rupture.[2]

During temporary clipping, however, the regions supplied by the clipped vessels are susceptible to ischemic injury, especially if the clip remains in place for a prolonged period. Four basic methods are used in efforts to expand the safe clipping interval in order to give the surgeon more time to reconstruct the artery without incurring hypoperfusion injury. First, a proximal clip may be placed on the feeding artery earlier in the process; this technique reduces the tension on the aneurysm (hence reducing the incidence of premature rupture during the dissection and clipping) without completely arresting flow within the two exiting vessels or their branches. Second, the systemic blood pressure may be raised slightly above normal levels in order to enhance perfusion through collateral channels. Third, the surgeon may avoid including a vessel that feeds a perforating end artery in the trapped segment. And fourth, the brain's energy requirements and metabolic activity may be suppressed, either with medications (i.e., barbiturates) or through the induction of mild hypothermia.[3,4]

After the permanent clip has been placed, the aneurysm is collapsed, and the temporary clips are removed, restoring normal blood flow to the region. The base of the aneurysm is then carefully inspected to make sure that complete obliteration has been achieved without compromise of perforators or exiting trunks. Intraoperative angiography is used routinely at many centers to confirm the obliteration of the aneurysm and the patency of distal vasculature.

Even after successful aneurysm obliteration, the patient remains at risk for later problems related to the subarachnoid hemorrhage. Vasospasm is a delayed and often severe vasoconstriction that reaches a peak intensity and incidence around the seventh day after subarachnoid hemorrhage; it is caused by a combination of clot retraction, mechanical deformation, and the release of vasoactive substances on the regional arterial system adjacent to the bleeding site. Early and complete obliteration of the aneurysm allows for more aggressive treatment of this condition with the use of combinations of angioplasty and hypervolemic, hypertensive hemodilutional therapies. If problems with absorption of cerebrospinal fluid persist after vasospasm has passed, a permanent ventricular shunt may be required.

Outcomes after aneurysmal subarachnoid hemorrhage have substantially improved over the past 30 years, particularly in highly specialized neurosurgical centers with high-volume practices.[5] Early intervention, aggressive treatment of hydrocephalus and vasospasm, emerging endovascular techniques, and refined surgical techniques such as approaches through the skull base and temporary clipping have contributed greatly to this trend. The induction of mild hypothermia during the interval of temporary clipping, as discussed by Todd *et al.* in this issue of the *Journal* (pages 135–145), represents an attempt to prolong the safe interval of focal circulatory arrest. Unfortunately, the methods used in the study by Todd *et al.* failed to produce significant benefits in this group of patients.

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3. Selman WR, Spetzler RF, Roski RA, Roessmann U, Crumrine R, Macko R. Barbiturate coma in focal cerebral ischemia: relationship of protection to timing of therapy. J Neurosurg 1982;56:685-90.
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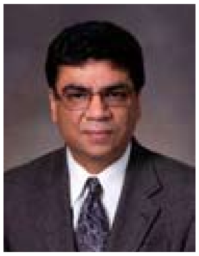
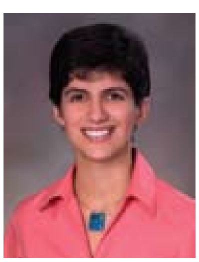
5. Berman MF, Solomon RA, Mayer SA, Johnston SC, Yung PP. Impact of hospital-related factors on outcome after treatment of cerebral aneurysms. Stroke 2003;34:2200-7.

New Faculty



Anish Bhardwaj, M.D., F.A.H.A., F.C.C.M., was recruited from Johns Hopkins University School of Medicine, Baltimore, Maryland to develop and implement a neurosciences critical care program at OHSU. Dr. Bhardwaj completed his residency training in neurology at the Mount Sinai School of Medicine, New York, and a fellowship in neurosciences critical care at the Johns Hopkins University School of Medicine, where he joined the faculty and rose through the ranks to become vice chairman in the Department of Neurology, co-director of the Neurosciences Critical Care Division and associate professor of neurology, neurological surgery and anesthesiology/critical care medicine. He is presently a professor of neurology, neurological surgery, and anesthesiology & peri-operative medicine and the director of the Neurosciences Critical Care Program at OHSU. He has received numerous national awards and has authored more than 130 publications, including original research articles, invited reviews, editorials, book chapters and three books. He serves on the editorial boards of several peer-reviewed journals, including: *Stroke*, the *Journal of Cerebral Blood Flow and Metabolism*, *Critical Care Medicine*, and the *American Journal of Physiology-Heart and Circulation*, and he is a member of several study sections for the National Institutes of Health and the American Heart Association.

Aclan Dogan, M.D., joined neurological surgery as a skull base instructor in 2001, entered the OHSU neurological surgery residency program in 2002, and joined the faculty in July 2006. He received his medical degree in 1986, and completed his neurosurgical residency in 1994, both at Ankara University School of Medicine, Ankara, Turkey. Following six months as a staff neurosurgeon at Sevgi Hospital Ankara, Turkey, Dogan spent six months as a cerebrovascular fellow at Nagoya University Schoool of Medicine, Nagoya, Japan. In 1995, Dogan moved to Wisconsin and spent three years as a research associate in the Department of Neurological Surgery at the University of Wisconsin. Dogan joined the Department of Neurosurgery at Louisiana State University in 1999, as a fellow in general neurosurgery.



Maria Fleseriu, M.D., joined neurological surgery in the neuroendocrinology, pituitary diseases clinic, in July 2006. She received her medical degree from The University of Medicine and Pharmacy of Timisoara, Romania and completed residency training in internal medicine and an endocrinology fellowship with a focus in pituitary disorders at University Hospital, Sibiu, Romania. Subsequently, she completed an additional internal medicine residency at Case Western Reserve University, Cleveland, Ohio, and an endocrinology fellowship at Cleveland Clinic Foundation. Active in clinical research since the late '80s Dr. Fleseriu's research interests include pituitary and thyroid disorders. Dr. Fleseriu has published extensively and has coauthored several book chapters detailing pituitary and thyroid pathology. Dr. Fleseriu is board certified in internal medicine and board eligible in endocrinology (she will complete her board examination in October 2006).

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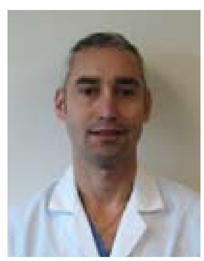
New Residents

Samuel Hughes, M.D., Ph.D., joined neurological surgery in July 2006, as a year three resident after completing his first two years of neurosurgical residency at the University of California, San Diego (UCSD). Dr. Hughes obtained a bachelor's degree at UCSD and a Ph.D. in classical studies at the University of Pennsylvania, where he also played ultimate frisbee for four years with the UPenn Void. He received his medical degree from UCSD in June, 2004. His neurosurgical interests include trauma of the brain and spine.

Ahmed M.T. Raslan, M.D., entered the neurological surgery residency program in 2006 as a year two resident. Raslan received his undergraduate bachelor degree of medicine and surgery (B.M., B.Ch.) from Ain Shams University, Abbassia, Cairo, Egypt, in 1994. In 1998, Raslan received a master's degree in medicine from Ain Shams University, specializing in surgery. From 1995 to 1999, Raslan was a resident of neurosurgery at Ain Shams University, and in 2000 he moved to Ankara, Turkey, as a clinical fellow in functional and stereotactic surgery, working with Professor Kanpolat in the Department of Neurosurgery, Ankara University. In 2002, Raslan received a medical degree from Ain Shams University, specializing in neurosurgery. Dr. Raslan, joined neurological surgery as an instructor in functional and stereotactic neurosurgery in 2004-2005. In 2005-2006, he completed a stereotactic and functional neurosurgery fellowship at the University of British Columbia, Vancouver, Canada.



Mehmet C. Berk, M.D., joined neurological surgery in July 2006 as a year two resident. He obtained a medical degree from Hacettepe University Faculty of Medicine, Ankara, Turkey and a degree in neurosurgery from Ankara University School of Medicine, Turkey. Dr. Berk has completed fellowships in functional neurosurgery at Halifax, Nova Scotia, Canada and in pediatric neurosurgery at Washington University, St. Louis. Dr. Berk has contributed to the neurosurgical clinical research literature as an author or co-author of more than 60 publications in Turkish and North American scientific journals.

Mark Piedra, M.D., joined neurological surgery in July 2006, as a year one resident. A native New Yorker he spent much of his childhood in Caracas, Venezuela, and Rio de Janeiro, Brazil. After graduating high school, he worked as a computer consultant for IBM for several years and in 1996 graduated from the University of Alaska, Fairbanks, with a bachelor's degree in physics. He then worked for some engineering firms before volunteering for the Peace Corps, where he spent two years teaching high school math and science in rural Zimbabwe. In 1999, Dr. Piedra returned to Alaska and spent a few more years working for engineering companies and as an instructor at the University of Alaska. He received his medical degree from

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New Faculty *continued...*

Daniel J. Guillaume, M.D. joined neurological surgery in the Division of Pediatric Neurosurgery, in July 2006. Dr. Guillaume comes to OHSU from the Centre for Minimally Invasive Neurosurgery, Prince of Wales and Sydney Children's Hospital, Sydney, Australia where he was a fellow of Pediatric Neurosurgery. Dr. Guillaume received his medical degree from University of Iowa and specializes in pediatric brain and spinal cord injury, and the use of neuroendoscopy. Dr. Guillaume's clinical and basic research interests include, neuroendoscopy, neurotransplantation, genetic syndromes and congenital anomalies, and cell and gene product replacement therapy.

James K. Liu, M.D. joined neurological surgery as an instructor in skull base surgery in July 2006. Dr. Liu received his undergraduate degree from University of California, Los Angeles, California and his medical degree from New York Medical College, Valhalla, New York. He completed his residency in neurological surgery at University of Utah in June 2006. He was recently awarded the Dandy Clinical Fellowship from the Congress of Neurological Surgeons for his work in skull base and cerebrovascular surgery with Johnny B. Delashaw, M.D.

Feridun Acar, M.D., joined neurological surgery as an instructor in functional and stereotactic neurosurgery in July 2006. He obtained a degree in medicine from Hacettepe University Faculty of Medicine, Ankara, Turkey and also completed an internship at the same institution. He completed residency in neurological surgery at Dokuz Eylül University, Faculty of Medicine, İzmir, Turkey in 2003. In 2004 he was a consultant surgeon and completed the first year of a Ph.D. program on neural cognitive science at Dokuz Eylül University, Faculty of Medicine, he remains enrolled in the Ph.D. program. Dr. Acar was an assistant professor in the Department of Neurosurgery at Gulhane Military Medical Academy, Ankara, Turkey and the Department of Neurosurgery, Pamukkale University, School of Medicine, Denizli, Turkey, in 2004 and 2005, respectively.

New Residents *continued...*

the Mayo Clinic College of Medicine in May 2006. He enjoys the outdoors, hiking, canoeing, downhill skiing, and flying airplanes.

Eric Thompson, M.D., joined neurological surgery in July 2006, as a year one resident. In 2002, he completed a bachelor's degree in psychology at Duke University, Durham, N.C. In May 2006, he completed a medical degree at University of Nebraska College of Medicine, Omaha. Throughout medical school, Dr. Thompson served as an academic leader and was the recipient of many academic achievement awards. His interests include international travel, music, classic literature, downhill skiing, golf, and he is fluent in Spanish.

OHSU Neurosurgery Residency

The OHSU neurosurgery residency program has been re-certified by the Accreditation Council for Graduate Medical Education (ACGME). The ACGME decision was based on a 105-page written application filed in February 2006 and a site visit to OHSU by an educational reviewer in March 2006. The new accreditation took effect in June 2006.

OHSU's neurosurgery residency program was one of the first of 96 neurosurgery programs in the nation to recertify under new regulations that emphasize teaching and evaluation of "core competencies": the ACGME Outcomes Project. The OHSU neurosurgery residency program director, Nathan Selden, M.D., Ph.D. is involved in competency learning efforts across the spectrum of neurosurgical training and practice, and serves as an editor of the Self-Assessment in Neurological Surgery (SANS) for the Congress of Neurological Surgeons.

The OHSU neurosurgery residency program received a five-year renewal certificate, the longest granted. The application process was spearheaded by Dr. Selden and program administrator, Joanie Mastrandrea.

Resident Awards

Josh Golshani, M.D.

Western Neurosurgical Society Research Resident Award 2006
Role of the Endothelin A and B Receptors in Maintenance of Cerebrovascular Tone.
Kiarash J. Golshani, M.D., Jeffrey J. Iliff, B.S., Targol Saedi, B.A., Richard J. Traystman, Ph.D. and G. Alexander West, M.D., Ph.D.

Zachary Litvack, M.D.

Tartar Award 2006
Pilot Studies of Dynamic Contrast Magnetic Resonance / Three Site Exchange: An imaging technique with potential for early detection of tumors of the central nervous system.
Investigators: Zachary Litvack, M.D. and Charles Springer, M.D.
Mentor: Edward Neuwelt, M.D.

OHSU new "look-and-feel"

In recent months, OHSU has been in a period of transformation, marked by new, cutting-edge facilities on Marquam Hill, development of new research and clinical care facilities, a new campus at South Waterfront and an aerial tram connecting the two sites.

This transformation allows OHSU to serve more patients, expand research programs and educate more students. It provides an opportunity to refresh and re-energize the OHSU look and feel; that is, how OHSU communicates its unique mission and conveys its value to Oregonians. Components of the update include a new logo and color scheme, a unified look for signs, and better consistency in the messages used to describe OHSU.

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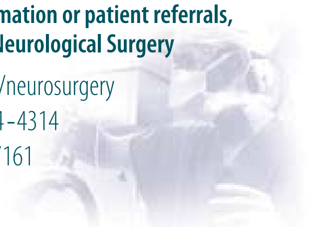

For more information or patient referrals, contact OHSU Neurological Surgery

www.ohsu.edu/neurosurgery
Phone: 503 494-4314
Fax: 503 494-7161
nsg@ohsu.edu

Recent Publications

Neurological surgery faculty work has received special recognition by gracing the covers of the following publications.

May 2006: *Journal of Neurosurgery:* Contrast ultrasonographic assessment of cerebral perfusion in patients undergoing decompressive craniectomy for traumatic brain injury
Peter Heppner, **Dilantha B. Ellegala,** Marcel Durieux, John A. Jane Sr. and Jonathan R. Lindner.

June 2006: *Stereotactic and Functional Neurosurgery:* Automatic Microelectrode Recording Analysis and Visualization of the Globus Pallidus Interna and Stereotactic Trajectory
Jon Haakon Falkenberg, James McNames and **Kim J. Burchiel**

June 2006: *INSIGHTS: Facts and Stories about Trigeminal Neuralgia* by Dr. Joanna Zakrzewska, TNA Medical Advisory Board (cover illustration by **Andy Rekito**)

August 2006: *Journal of Neurosurgery:* Anatomical analysis of transoral surgical approaches to the clivus **Vijayabalan Balasingam, Gregory J. Anderson, Neil D. Gross, Cheng-Mao Cheng, Akio Noguchi**, **Aclan Dogan, Sean O. McMenomey, Johnny B. Delashaw Jr**. and **Peter E. Andersen** (cover illustration by **Andy Rekito**, shown here)

September 2006: *Journal of Neurosurgery: Pediatrics* Minimal tethered cord syndrome associated with thickening of the terminal filum
Nathan R. Selden, Randal R. Nixon, Steven R. Skoog and David B. Lashley