



Medical College of Georgia

Neuroscience Outlook

Department of Neurosurgery Newsletter

Volume 1, Issue 1 - Summer 2004

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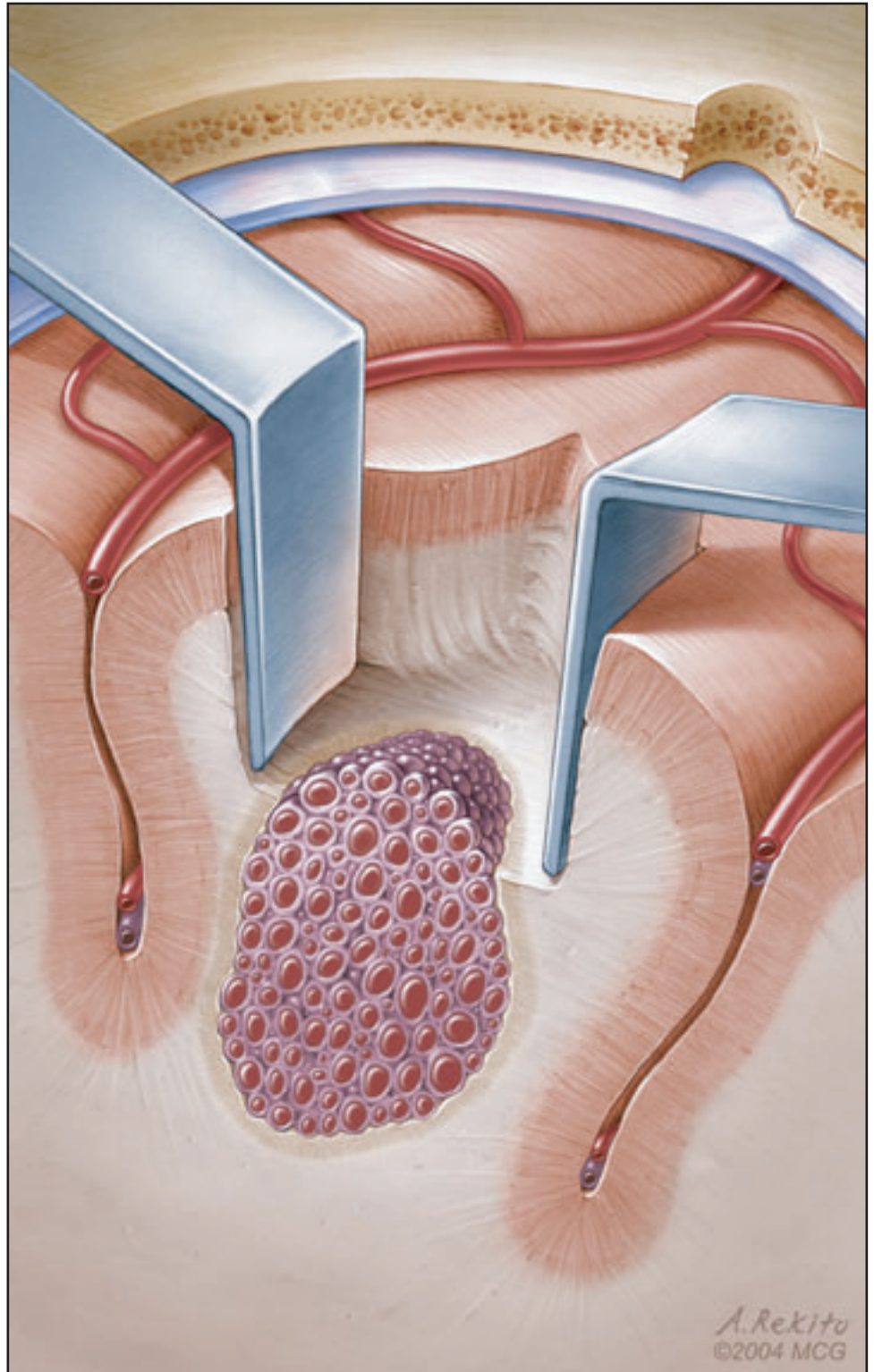
July-December

MCG

Neuroscience Center

www.mcg.edu/som/neurosurgery

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Clinical Spotlight: Cavernous Malformations

Chair's Message

Welcome to the first issue of **The MCG Neuroscience Outlook**. I am thrilled with our recent successes as a new Department of Neurosurgery, and I am very excited about our future. We have been fortunate to recruit three new faculty into our department over the past six months. In addition to our busy and successful practice at MCG, we are planning to start two community-based neurosurgery practices this fiscal year, and have initiated recruitments for two new neurosurgeons to take part in this. We are also entering into a new strategic direction for the department by working to aggressively build our research programs.

First of all, I'd like to welcome the new faculty members into our Department. Dr. Cargill Alleyne has a primary interest in Cerebrovascular Neurosurgery with expertise in both transcranial and endovascular neurosurgery. He completed his residency at Emory University and fellowship in Cerebrovascular and Cranial Base Neurosurgery at the Barrow Neurological Institute. Prior to coming to MCG, he was a valuable and well-respected faculty member at the University of Rochester for four and a half years. He joined us in January as Associate Professor and Vice-Chair for Academics for the Department. In addition, he was named the Residency Program Director in February. Dr. Kimberly Bingaman is a Pediatric Neurosurgeon. She completed her residency at Emory University and fellowship in Pediatric Neurosurgery at the National Children's Medical Center in Washington, DC. She has been a staff neurosurgeon at National Children's for the past year. She has recently joined us as Assistant Professor, and Chief of the newly formed Section of Pediatric Neurosurgery (I guess I needed a boss). Dr. Alfredo Voloschin has just joined us as a Medical Neurooncologist. He is a neurologist who has just completed his fellowship in Neurooncology at the MGH and Harvard University School of Medicine. He will head up our Neurooncology program and begin formulating plans to create a Brain Tumor Center at MCG.

I am excited to announce that we will start a community-based neurosurgery practice at Aiken Region Medical Center in Aiken, South Carolina. We are on track to begin taking care of patients there in September. This service will be staffed by MCG neurosurgeons. We are also close to completing negotiations with another community hospital in Augusta to provide a similar service. To help with this expansion of our clinical program, we are in the process of recruiting two additional faculty neurosurgeons.

Dr. Sergei Kirov joined our department as Assistant Professor a little over a year ago. He is a neuroscientist with an interest in synapse morphology and physiology with an emphasis in epilepsy. He has successfully transferred his laboratory from Boston University, and in addition, he has just completed the difficult start-up process of creating our Human Brain Laboratory. This is a facility adjacent to the operating rooms which will receive human brain tissue from epilepsy surgical specimens. Dr. Kirov will initially study synapse morphology and physiology in living human brain tissue, but we have some exciting plans for molecular biology studies and tissue culture. In addition, it is our hope that this will develop into a "core laboratory" for MCG neuroscientists who wish to investigate basic neuroscience questions about the human brain.

Dr. Ellen Shaver continues to have great success in her laboratory at the Augusta VAMC which studies basic mechanisms in cerebral vasospasm follow subarachnoid hemorrhage. This is a favorite laboratory for the residents to participate in.

In conjunction with Dr. Alleyne, we are the process of recruiting a faculty-level neuroscientist to start the Neurovascular Research Laboratory. This laboratory will focus on issues of ischemia and stroke.

We are very excited to announce that we have initiated the recruitment of a Vice-Chair and Director for Neurosurgery Research. Our hope is to recruit a mid-level or senior neuroscientist to take over the direction of research within the department. The recruitment package for this individual will include start-up packages and laboratory space for two additional junior research faculty members for independent research programs.

As you can see, we are moving quickly to position ourselves as a preeminent clinical and academic Department of Neurosurgery. We are fortunate to have dynamic, energetic, and highly skill faculty members, and we will base our future growth and success on them.

Mark Lee, MD, PhD, FACS
Professor and Chair
Department of Neurosurgery

Clinical Spotlight

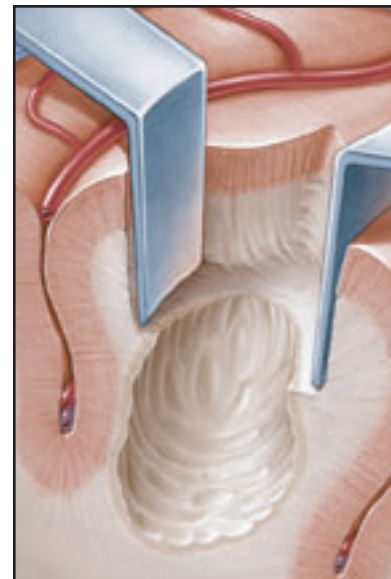
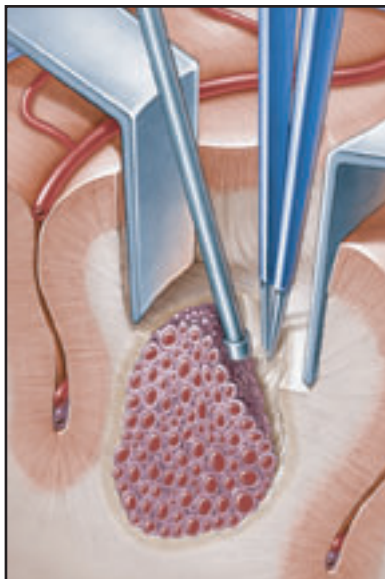
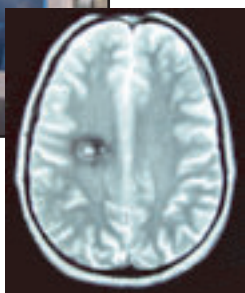
Cavernous Malformations

Clinical features and characteristics: Cavernous malformations (also known as cavernous angiomas, cavernous hemangiomas or cavernomas) are clusters of abnormal blood vessels that can occur in the brain, spinal cord or other parts of the body. Physically the appearance is that of a mulberry and consists of multiple caverns of varying sizes filled with blood products and lined by endothelial cells. They occur in 0.5-1 % of the population, or 1 in 100-200 persons and can develop de novo. Thus up to 3 million persons in the U.S. harbor at least 1 cavernous hemangioma lesion. Patients can present with seizures, stroke symptoms, bleeds, and headaches, but some of these lesions are asymptomatic. Generally 50-70% of persons with cavernous malformations will eventually develop symptoms. Cavernous malformations can range in size from the microscopic to several centimeters and they can be solitary or multiple. They can bleed in any number of ways. Microscopic hemorrhages may occur in the walls of the malformation and most of these are either asymptomatic or present with seizures from the epileptogenic nature of the blood products deposited around the lesion. Overt, symptomatic hemorrhage can also occur (1% per lesion per year).

Genetics: The familial form of the disease occurs predominantly, but not exclusively in the Hispanic population. There have been 3 separate genes so far identified: CCM1 on 7q, CCM2 on 7p13-15, and CCM3 on 3q25.2-27.

Associated vascular lesions: Cavernous malformations may arise in the vicinity of venous angiomas which are developmental anomalies that are not pathologic. The key during surgical resection is to remove the cavernous malformation while preserving the venous angioma since this structure provides venous drainage from normal brain tissue.

Diagnosis and treatment: Although the entity has been known since the 1930s, it was not until the advent of MRI in the 1980s that cavernous malformations were reliably diagnosed. Serial MR imaging is used to assess changes in size of known lesions, identify new bleeds and to monitor the appearance of new lesions. Surgery is generally indicated for accessible lesions that have repeatedly bled, are enlarging, or demonstrate progressive neurologic deficit. While surgery on cavernous malformations of the brainstem or spinal cord is riskier, the natural history of these lesions may be worse. Surgery on cavernous malformations has been made safer by using image-guided navigation to reach the lesion with as minimal disruption to the surrounding normal tissue. The role of stereotactic radiosurgery in the treatment of these lesions is controversial and remains to be elucidated.



Department News

Grand Rounds Schedule

All grand rounds take place on Friday in the 3 West amphitheater.

July 23 12:00 noon Neuro 101
History of Neurosurgery - Marshall Allen, M.D

July 30 11:00 a.m. Grand Rounds
Spinal Cord Injury - Mona Samdani, M.D.

August 06 11:00 a.m. Neuro 101
Thoracolumbar Spine Trauma - Haroon Choudhri, M.D.

August 20 11:00 a.m. Neuro 101
Degenerative Spine Disease - Haroon Choudhri, M.D.

August 20 12:00 noon Grand Rounds
Neurocutaneous Syndromes - John Hain, M.D.

September 03 11:00 a.m. Neuro 101
Localization of Spine Disease - David Floyd, M.D

September 17 11:00 a.m. Grand Rounds
Sepsis in the Post Op Patient - TBA

New State of the Art 3West ICU Opens

Our new patient/family-centered care unit on 3W opened in December last year. The unit comprises 21 large state-of-the-art private rooms which facilitates family sleepovers. The unit includes a large family lounge area complete with child size furniture. Other amenities include a consumer resource area with two computers and health and wellness literature. The Healing Arts program periodically provides live music on the unit for patients and families.

3 West Neuroscience Center wins award

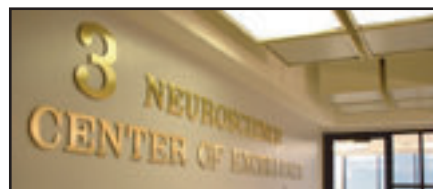
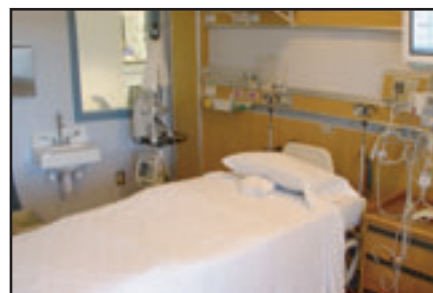
The Excel award, for the department that excels in using volunteers to enhance family-centered care, was recently given to the 3 West Neuroscience Center.

MCG Neurosurgery History Webpage

Through the combined efforts of Andy Rekito, Bill Hamilton, Dr. Bill Mayher (NS '70), Dr. Cargill Alleyne, and Dr. Marshall Allen, the Department of Neurosurgery recently introduced a HISTORY of MCG NEUROSURGERY section to the departmental website which includes a short synopsis of the history of our program, as well as a chronological list of alumni and group pictures of attendings, housestaff, and staff from various years. To view the site, go to www.mcg.edu/som/neurosurgery and click on **History** on the left hand navigation bar. If you have any suggestions or pictures that you would like to see added, please contact Bill Hamilton, Cargill Alleyne, or Andy Rekito via email or phone.

Clinical programs at MCG

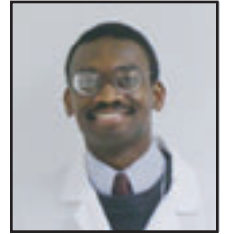
Look for further details on our clinical and research programs in upcoming issues of **Neuroscience Outlook**: Epilepsy, Gamma knife Radiosurgery, Movement disorders, Neuro-oncology, Neurovascular (including Neuro-Interventional), Pain, Pediatric Neurosurgery, Spinal Instrumentation, and Stereotactic surgery.



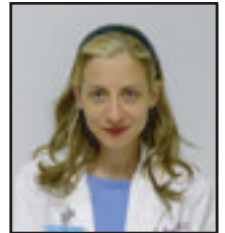
Faculty Update

New Faculty Appointments

Cargill H. Alleyne, Jr., M.D. joined our faculty on January 1st. Dr. Alleyne is a medical graduate of Yale in 1991 and completed his neurosurgical training at Emory University Affiliated hospitals in 1998. After a fellowship in Cerebrovascular and Skull base tumors with Dr. Robert Spetzler at the Barrow Neurological Institute, he joined the faculty of University of Rochester Department of Neurosurgery in July 1999. He received training in Interventional Neuroradiology at the same institution and spent some additional time with Dr. L.N.Hopkins in Buffalo, NY.



Kimberly Bingaman, M.D. joined our faculty on July 1st. Dr. Bingaman completed her medical degree in 1994 and neurosurgical training in 2001 at Emory University Affiliated hospitals. She then completed a Pediatric Neurosurgery fellowship at Children's National Medical Center in Washington, D.C. where she remained on faculty from January 2003.



Alfredo Voloschin, M.D. joins our faculty on August 1st. Dr. Voloschin received his M.D. degree from Universidad Nacional de Buenos Aires, in Argentina in 1985. His Neurology residency at University of Miami was followed by a Neuro-Oncology fellowship at the Massachusetts General Hospital. After a stint in private practice, he returned to MGH for a clinical research fellowship in 2002.

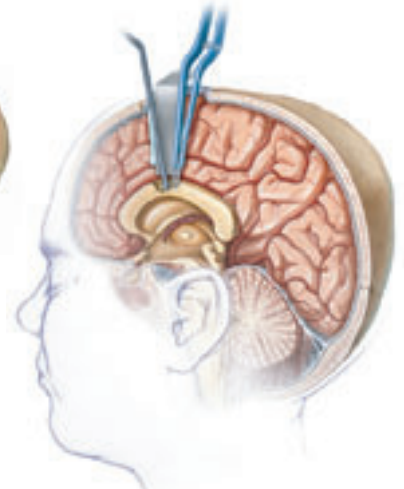
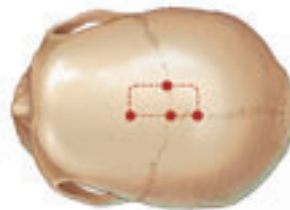
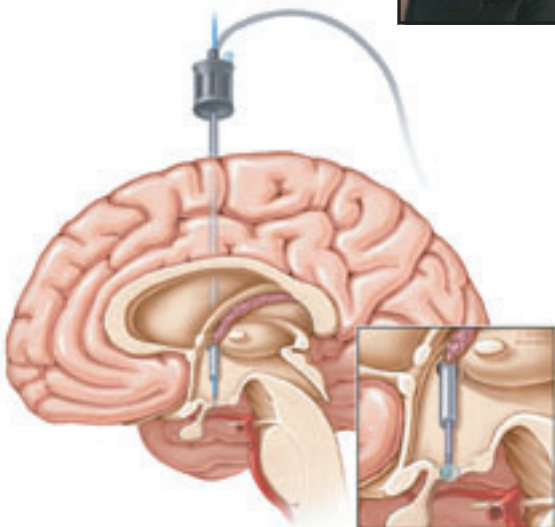


Accomplishments

Mona Samdani, M.D. recently earned her Board Certification in Physical and Rehabilitation Medicine in May 2004.



Mark Lee, M.D. successfully earned Board Certification in Pediatric Neurosurgery. (Dr. Lee has been Board certified from the American Board of Neurosurgery since 1997)



Resident Corner

Accomplishments and Recognition

Congratulations to **David Yeh, M.D.** who successfully graduated from our residency program in June. David will be joining a private practice group in New Orleans, LA. We wish him all the best.

David Yeh, M.D. was also elected to the Alpha Omega Alpha Medical Honor Society this Spring 2004 in his last year (PGY-6) of training.



Darlene Lobel, M.D. recently won the prize for best resident presentation at the Spring meeting of the Georgia Neurosurgical Society, May 28-30, 2004.



John Tuttle, M.D. won the Council of State Neurological Surgeons Resident Award. John will present his paper, which was co-authored with **Bill Hamilton**, at the upcoming Congress of Neurological Surgeons meeting in October 2004.



Residency Program Update

In the era of the 80-hour work week, it has become increasingly difficult to juggle the duties of a program to ensure superior resident education and to provide adequate resident coverage on a particular service. These challenges are acutely magnified in a program such as ours that trains just one resident a year for 5 years after internship and simultaneously has multiple services (i.e. MCG rotation, VA rotation, CMC rotation). To help mollify these challenges, we have applied for permission to extend the program length from 5 to 6 years after a year of internship. We are currently awaiting the results of our site review from January.

John Hain, M.D. passed the written portion of The Neurosurgery Board Examinations in March 2004

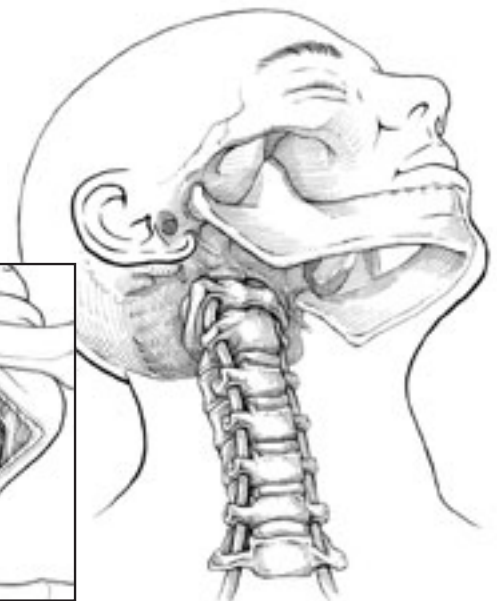
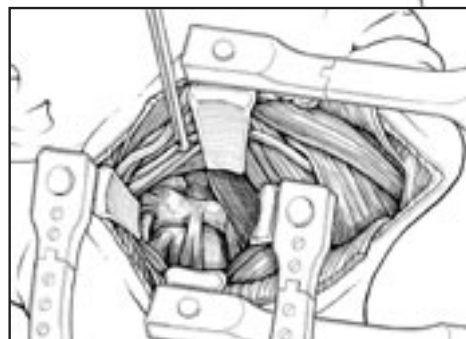


Contributors to Resident Educational Fund

Many thanks are given to **Leica** for their generous contribution to the resident educational fund.

The following alumni are also acknowledged for their contributions at the time of publication:

Ernest F. Daniel, M.D. (NS '59)
Clinton Massey, M.D. (NS '84)
Karsten Fryburg, M.D. (NS '02)



Presentations and Publications (January-June 2004)

Presentations:

Alleyne CH: Recent advances in the treatment of cerebrovascular disease, Neurology Grand Rounds, Medical College of Georgia, January 2004

Kirov S, Petrak LJ, Harris KM: Synaptogenesis on mature hippocampal neurons during recovery of ionic and osmotic homeostasis recapitulates development", The 37th Winter Conference on Brain Research, Copper Mountain, Colorado, January 2004 (Poster)

Choudhri H: Discogenic Back Pain – Evaluation and Management. Physicians Assistants Training Program, Medical College of Georgia, Augusta, Georgia, February 2004

Kirov S: Rapid changes in spines on mature hippocampal dendrites, Emory University, Atlanta, Georgia, February 2004

Kirov S: Confocal microscopy, two-photon microscopy and serial electron microscopy as complementary tools to study the fine organization of the nervous system", Neurology Grand Rounds, Medical College of Georgia, Augusta, Georgia, February 2004

Samdani S: Rehabilitation after spinal cord injury: Techniques and prognosis, American Society of Spine Radiology, Miami, FL, February 2004

Choudhri H: Coding for Spinal Surgery. Augusta Georgia Chapter of American Association of Professional Coders, March 2004

Choudhri H: Vertical Distraction Cages in the Reconstruction of Spinal Defects after Thoracolumbar Corpectomy, Visiting Professor, Johns Hopkins University Department of Neurosurgery, March 2004

Kirov S: Osmotic regulation of rapid changes in dendritic spines in mature hippocampal slices, Queen's University, Kingston, Canada, March 2004

Kirov S, Petrak LJ, Harris KM: Rapid changes in spines on mature hippocampal dendrites", The synapse: Molecular Mechanisms of Plasticity, St. Michaels, Maryland, March 2004 (Poster)

Rahimi SY, Yeh D, Choudhri HF, Lee MR: Management of pediatric atlantoaxial injuries, Southern Neurosurgical Society meeting, Amelia Island, Fl, March 2004

Smith JR: Gamma Knife in the Treatment of Chronic Pain, Grand Rounds, Walton Rehabilitation Center, March 2004

Choudhri H: Subarachnoid Hemorrhage. Heart and Brain Attack conference, Hilton Head, SC, April 2004

Samdani S: Fixing the stroke: Stroke rehabilitation, Neurology Grand Rounds, Medical College of Georgia, April 2004

Samdani S: Fixing the stroke: Stroke rehabilitation, Heart and Brain attack conference, Hilton Head, SC, April 2004

Samdani S: Cardiac rehabilitation, Heart and Brain attack conference, Hilton Head, SC, April 2004

Hamilton W, panelist on Improving your bottom line in today's neurosurgical practice. AANS meeting, Orlando, FL, May 2004

Kirov S: Homeostatic Structural Plasticity on Hippocampal Neurons, Neuroscience Center, University of Helsinki, Helsinki, Finland, May 2004

Lee M, Hamilton W: Anatomy of a new department of Neurosurgery at the Medical College of Georgia, Georgia Neurosurgical Society Meeting, May 2004

Lobel DA, Lee MR: Children with imperforate anus and tethered cord may benefit from early surgery, Georgia Neurosurgical Society Meeting, May 2004

Shaver E, Macomson S, Harris V, Winger J, Brophy C: Protein therapy inhibits vasospasm after experimental subarachnoid hemorrhage, Georgia Neurosurgical Society Meeting, May 2004

Alleyne CH: Neurologic support. Instructor, Fundamental Critical Care Support Course, MCG, June 2004

Publications:

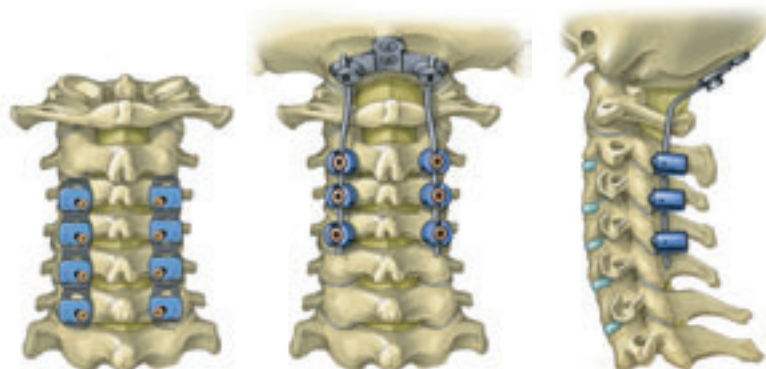
Alleyne CH: Review of "Neuroradiology. The Requisites", 2nd edition. J Neurosurg 100:1130-1131, 2004

Hamilton W, Lee M: Maximizing clinical productivity. American Association of Neurological Surgeons Bulletin vol. 13, no. 1., 2004

Kirov SA, Petrak LJ, Fiala JC, Harris KM: Dendritic spines disappear with chilling but proliferate excessively with rewarming of mature hippocampus. Neuroscience 127:69-80, 2004

Samdani S: Pelvic insufficiency fractures: A letter to the editor. Journal of the American Geriatrics Society 52:854, 2004

Smith JR, VanderGriff A, Fountas K: Temporal lobectomy in the surgical management of epilepsy: Technical report. Neurosurgery 54:1531-1536, 2004





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MCG Neurosurgery Newsletter – Summer 2004

Upcoming Meetings (July-Dec)

Congress of Neurological Surgeons

10/16 - 21, San Francisco, CA

AANS/CNS Section on Tumors

10/21 - 22, San Francisco, CA

Research Update in Neuroscience for Neurosurgeons

10/30 - 11/6, Woods Hole, MA

American Board of Neurological Surgery (Orals)

11/9 - 12, Houston, TX

Georgia Neurosurgical Society

11/19 - 20, Atlanta, GA

AANS/CNS Section on Pediatric Neurological Surgery

12/8 - 11, San Francisco, CA

Credits

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