



Chairman's Message

by Stacey Quintero Wolfe, MD, FAANS

It is with both pride and humility that I write my first address as Chair of the Young Neurosurgeons Committee (YNC). I am thrilled at the opportunity to represent this outstanding organization and am so appreciative of the efforts of each YNC member.

I am deeply grateful to the many before me who have worked for and with the YNC, in order for us to reach this exciting time. The YNC was created under the leadership of my program director, Dr. Roberto Heros, 22 years ago. What an honor to continue his vision. Through the outstanding leadership of many past Chairs, most recently that of Ed Smith, MD, FAANS, the YNC is a vibrant committee that serves the AANS as the voice of young neurosurgeons in education, public service, fundraising, medical student recruitment, and organized neurosurgery. This gives me some big shoes to fill (literally and figuratively!), but I am excited about the possibilities.

I have had the privilege to serve in both the AANS and the United States Navy, and work with great leaders in both organizations. The most effective leaders are those who lead by example. They are visionaries who lead with integrity, even in the face of opposition. They are dedicated not only to the mission, but also to their people. They develop trust and inspire people to achieve.

The core values of the Navy are Honor, Courage, and Commitment. These values are integrated into the mission and vision of Navy life, but are also embodied by those of us privileged to practice neurosurgery. There is no greater honor than that of caring for another human being; to inspire the trust of a family and treat every patient with integrity in the tumultuous face of malpractice, health care economics and politics. Neurosurgery is a specialty that requires courage; We take responsibility for human life on a daily basis. It requires a balance of humility and reverence with boldness and a pioneering spirit. Few understand commitment as does a neurosurgeon. We have studied for over a decade to practice our specialty, and will continue to train for life. Furthermore, we are committed to each patient, to each trainee, and to the practice of neurosurgery.

Values should make us different. They define who we are and what we do. When tested, it is our core values that anchor us. When sharpened, these values impassion us to lead, inspire, and champion. It has been my greatest privilege to care for our military and their families and I look forward to the opportunity to serve the YNC.



Secretary's Message: Our Future is Now

by Krystal L. Tomei, MD

The theme of the 2013 AANS Annual Scientific Meeting was "Changing Our Culture to Advance Patient Safety." This concept is not a new one. In 1910, Abraham Flexner submitted his *Report to the Carnegie Foundation* documenting the state of the nation's hospitals and medical schools and Ernest Codman from Massachusetts General Hospital described a need to improve hospital conditions. The American College of Surgeons issued standards of care in its Hospital Standardization Program in 1917. Now, nearly a century later, it is hard to describe health care without such catch phrases as "outcomes research," "quality improvement," "patient safety", and others.

The concept of quality has become our standard approach to evaluation of delivery of health care. As members of the YNC, we are in a prime position to be able to help our specialty define these standards of care, through contribution to evidence based guidelines, participation in outcomes databases like the N2QOD and the NeuroPoint

Alliance, and development of advocacy leadership in our field to ensure that physicians remain at the forefront of determining our best practices for optimizing patient outcomes. It is through these initiatives and our early involvement that the YNC can help shape neurosurgical care of the future.

I want to personally thank you all for your service on the YNC. I am honored to have been elected as Secretary of the YNC. I pledge to continue to seek opportunities for our members to take an increasing role in these quality initiatives, as it is through our involvement that we can truly continue to advance patient safety.



2013 AANS Annual Meeting in New Orleans – Young Neurosurgeons Luncheon

AANS Annual Meeting Highlights

The Young Neurosurgeons luncheon was a success, featuring Nathan Selden, MD, PhD, FAANS. Two awards were given out at the luncheon: Anthony Wang, MD (Resident, University of Michigan) was the recipient of the YNC Public Service Citation and Nima Alan (MS2 at Case Western Reserve) was the recipient of the YNC Medical Student Abstract Award.



Chairman Dr. Wolfe presenting plaque to Nima Alan



Dr. Selden, the YNC Luncheon featured speaker

Several of our own YNC members presented abstracts at the Plenary Sessions.



Amanda Muhs Saratsis, MD speaking at Plenary Session II



Edward R. Smith, MD, FAANS, outgoing YNC Chairman, speaking at Plenary Session III



The Neurosurgical Top Gun booth drew residents from around the world to participate in simulation sessions, raising nearly \$6300 for the Neurosurgical Research and Education Foundation. The competition winners were –

Top Honors - 2013 Neurosurgical Top Gun

Jonathan Forbes, MD
Vanderbilt University

Endovascular Aneurysm Occlusion Simulator

Jay Vachhani, MD
University of Illinois/Peoria

Image Guided Lumbar Pedicle Screw Placement

Jonathan Forbes, MD
Vanderbilt University

Thoracic Deformity Correction Simulator

Jay Vachhani, MD
University of Illinois/Peoria

Ventriculostomy Placement

Doris Wang, MD, PhD
University of California/San Francisco

Rules of the competition limit the top awardees to be neurosurgical trainees. Special commendation goes to Alexander Dorsch, a medical student from the University of Zurich, Switzerland, who had the highest score at the Thoracic Deformity Correction station.



Exit Strategies

by Edjah Nduom, MD

How do I find a job? When should I start looking for one? What are the types of practices out there? Do private practice jobs still exist? How do I stay out of trouble, legally? How do I maximize the value I create?

These questions, and many more, are faced by senior residents, chief residents, and fellows as we prepare to leave the very structured, linear world of residency. While we make our final career decisions and start the job search, this is the first time, for many of us, that we are truly faced with many different options on how to begin our careers. Before now, many of us simply followed the predictable track of “Do well in high school to get to a good college -- do well in college to get into a good medical school -- do well in medical school to get into a good residency program” that we all know so well. Until recently, guidance on the transition to practice represented a significant gap in the training that is provided to us by our residency programs.

In an effort to address this gap, the AANS created the **Exit Strategies for Chief/Senior Neurosurgery Residents** course. AANS President William T. Couldwell, MD, PhD, FAANS directed the course, which was aimed at helping

senior and chief residents address the very questions posed above. As a pilot program, it was restricted to 25 chief/senior residents who were nominated by their programs and selected to attend the course.

The course was administered over two days in early April. The first lecture, "Finding a Job," was an entertaining lead-off presentation from the YNC's own Dr. Ed Smith, together with Judy Rosman, JD, (Rosman Search, Inc.). They helped to address the question of how to break the ice in a job search for which many of us are otherwise unprepared. The instructors covered tips on when to start sending out cover letters and resumes (hint: start early, maybe 18-24 months in advance of your proposed start date) as well as what to look for in an ideal practice. The agenda included detailed presentations on the ins and outs of hospital-employed practices as well as small- and large-sized private practice groups. Drs. Smith and Couldwell then presented on the benefits and drawbacks of academic practice. The speakers at the working dinner covered the liability concerns one faces as a physician practicing as part of a medical team.

Presentations covered the various legal issues encountered by neurosurgeons in practice. Specifically, we were taught ways to ensure that your billing practices are not subject to audit; how to continue to maximize revenue while steering clear of violations of Stark law; as well as strategies to mitigate the damage caused by malpractice claims and how to avoid them altogether. Katie Orrico, JD, Director of the Joint Washington Office, addressed the future of healthcare as it pertains to neurosurgeons, given the pending changes of the Affordable Care Act. Finally, Dr. Couldwell introduced us to the process of board certification and maintenance of certification, while Thomas Marshall, the Executive Director of the AANS, introduced us to the various benefits of AANS membership and reminded us all to get involved.

All in all, the course was a great success and was well-reviewed by the attendees. In the future, the course is likely to open enrollment to mid-level and senior residents in the PGY4-5 range, to ensure that residents have a chance to review this vital information before they make final practice decisions.

Are there other issues you would like to see addressed in a future Exit Strategies Course? Please let us know by e-mail to Krystal Tomei, MD at ktomei@gmail.com. Stay tuned for information on the 2014 course!

Expanding Borders: Haiti Neurosurgery Project Volunteer Opportunity

Ashish Shah, MS4 (University of Miami)

Haiti, the poorest nation in the Western Hemisphere, has only three trained neurosurgeons for a population of ten million. Hospital Bernard Mevs/Project Medishare is the only trauma and critical care hospital in the nation, and currently experiences three to four deaths every week due to severe brain injury. Today, there is not only a lack of trained physicians, nurses, and allied health professionals but also a lack of equipment and treatment facilities.

Project Goals:

- 1) To provide 24/7 neurosurgical coverage at the only trauma and critical care hospital in Haiti using volunteers from US/Canada including neurosurgeons, neurosurgical fellows, and senior level residents.
- 2) Volunteers will train and equip a corps of trauma surgeons to be placed strategically in each of the 10 departments (states) of Haiti to provide a short-term, immediate resource designated to aid in the treatment of specific neurosurgical trauma-related conditions.

3) To identify capable general surgeons from Haiti to send to the United States or Canada to undergo training at sponsored neurosurgical residency programs. At the completion of their training, they would agree to return to Haiti to create the first comprehensive neurosurgical residency program in their nation.

Each volunteer neurosurgeon, fellow or resident, in addition to donating their time and expertise, is asked to raise or donate \$1000 for a minimum of a one week tour (Saturday to Saturday) to cover their own expenses. These funds would cover the cost of their airline ticket, local housing, food, and transportation within Haiti.

Please contact Ashish H. Shah at ashah@med.miami.edu for more information.

Public Service and Residency – Finding the Balance

An Interview with the 2013 YNC Public Service Citation Recipient, Anthony Wang, MD

by Krystal L. Tomei, MD

Dr. Anthony Wang, a rising chief resident at the University of Michigan, is the recipient of this year's YNC Public Service Citation. Dr. Wang's co-resident, Khoi Than, MD, submitted the nomination describing Dr. Wang as "a clinically-busy and academically-productive neurosurgery resident, dedicated husband, and doting father." He was nominated for his work with several different organizations, including the Alpha House – a halfway house for families with children; Helping Hands – a service through his church that provides a "respite night" for parents of children with disabilities; Habitat for Humanity; and Project Shunt – the University of Michigan's medical mission trip to Guatemala. We had the opportunity for a brief interview with Dr. Wang as he describes how he became invested in these opportunities and advice for others.



You have a clear history of volunteer work, when did you first start to get involved in these activities and what was your motivation?



Growing up, my parents frequently forced me to perform menial labor for what seemed like random people at odd times for no compensation. I then developed more consistent volunteer projects through my church, whereby I had the opportunity to see some of the results of our work. By then, volunteer work had become just a routine part of my life, with about the same fun-to-pain ratio as brushing my teeth, or watching *Saved By The Bell: The New Class*. Only towards the end of high school did I begin to really enjoy it. I enjoyed it even more when I discovered it was a great way to meet girls. In the end, motivations change, but my parents having made service a habit helps me spot opportunities to pitch in.

During a busy neurosurgery residency, you've been able to find a balance between work, family, and volunteerism. What advice would you give to other residents about how to juggle these responsibilities?

I'm not really all that efficient a person, so I wouldn't presume to give advice on how to spend what precious free time we have. But for me, my first priority is my family, but it's my family that allows me to pursue my other priorities. I'm able to show up to work every day because my wife, Page (who is a resident herself), handles everything but the most meaningless issues at home. Because she recognizes that we neurosurgeons are trying very hard to do something good, she lets me take care of other folks' kids and houses, while she takes care of ours.

How can a resident interested in volunteer and outreach work find out about opportunities available to them?

I've found that, for every need imaginable, there are nice people looking to fulfill that need for someone else. You probably work with at least 2,000 of them. On your day off, you have probably helped one carry his/her groceries, or shared a picnic with one, or almost run over one in a crosswalk in your hurry to get to the library before it closes. Find one of those people, and you'll find lots of opportunities, some convenient and flexible, some not at all. Then, all you have to do is take the first step.



How has your involvement with Project Shunt affected your perspective on medicine in the United States?

Mostly, I've been amazed by how much the team is able to accomplish with so little. Nicholas M. Boulis, MD, FAANS and Karin Muraszko, MD, FAANS, created this mission and sustained it through some really lean years, and now, with Hugh J.L. Garton, MD, MHSc, FAANS and Suresh Ramnath, MD, FAANS(L), and a team of tireless and generous pediatricians, anesthesiologists, and nurses, they're able to provide what I consider to be essentially equivalent quality of care to anyone who walks (or mostly, are carried) through the door. Suffice it to say that, if I gave birth to a baby with a myelomeningocele tomorrow (unlikely though it may be), I'd want it closed by that team, no matter where on the planet they happen to be at that moment. It's having worked with that kind of team that makes me believe that our specialty really can provide quality care to even the most needy populations.

What are your goals for your future career with regards to international outreach?

I'm committed to it. I have some family in rural China who are helping me gain a foothold there, but at this point, it's difficult to be more specific than that. Sometimes it seems impractical or impossible (or both), but it's reassuring to know that names like A. Leland Albright, MD, FAANS(L); Benjamin C. Warf, MD, FAANS; Robert J. Dempsey, MD, FAANS; Michael M. Haglund, MD, PhD, FAANS; and John Ragheb, MD, FAANS have made international outreach a meaningful part of their lives, all in different ways. Those of us looking to pursue community, domestic, or international outreach have mentors to show us the way.



Leadership Beyond Neurosurgery

by Maya Babu, MD

ACS-RAS Liaison, Advisory Council for Neurologic Surgery

Why Join the American College of Surgeons Resident Associate Society (ACS-RAS)?

There are many member benefits offered through the American College of Surgeons for RAS members:

- Free subscription to the Journal of the American College of Surgeons
- Free access to the ACS Job Bank
- Free annual registration to the Clinical Congress
- RAS-ACS News: A quarterly email newsletter
- “Residents as Teachers and Leaders” Course
- Multiple leadership, research, and advocacy scholarships
- Surgical Research Clearinghouse
- Access to Practice Management tools for the graduating resident or fellow
- Educational resources for surgeons in training

Why Should a Neurosurgical Resident join the ACS-RAS?

Trainees in surgical specialties are welcome and can thrive within the College. Being a member of a professional society not only helps with training and education, but also helps define a neurosurgical resident as a professional in the broader field of surgery. Fellowship in the College is considered a respected professional honor by one’s colleagues.

There are some unique opportunities available to neurosurgical residents interested in the RAS:

- Access to diverse career resources and multi-specialty practice opportunities
- Camaraderie with surgical resident colleagues
- Advocacy on important issues that affect trainees across surgical disciplines
- Opportunities to present abstracts at meetings and publish through College publications, including the widely circulated *ACS Bulletin*

For more information, please visit: www.facs.org. If you have any questions or would like to learn more, please do not hesitate to contact me (mayababu@gmail.com).

Division Updates

The YNC provides liaisons to most of the AANS committees, all of the sections, as well as to outside groups. These liaisons are divided into divisions of related constituencies and report to a division coordinator who insures coverage and consistency.

Education Division

Coordinator: **Edjah Nduom, MD**

The April AANS meeting was very productive for the Education Division. The **Marshals Subcommittee** (**Maya Babu, MD**, Chair) was able to fill all of the available slots for the 2013 Annual Scientific Meeting in New Orleans. This year, the Marshalls Subcommittee and the **Neurosurgical Top Gun Task Force** (**Jorge Alvaro Gonzalez-Martinez, MD**, Chair) shared many of their volunteers. This will hopefully lead to continued collaboration in the future, giving our younger members more ways to get involved. The **Maintenance of Certification/Continuing Medical Education Committee** (**Maya Babu, MD** Liaison, **Chris Fox, MD** Alternate) emphasized the various

reduced-price or free materials available to trainees through their websites. They also provided a warning that there is a push from outside of the American Board of Neurological Surgeons to increase the failure rate in the MOC process. More information will be provided as this develops.

The **Education and Practice Management Committee** (**Khoi Duc Than, MD** Liaison) reported strong attendance at their various course offerings, but noted that funding for the resident courses is waning. They may consider introducing a resolution to the Council of State Neurosurgical Societies to discourage resident attendance at courses sponsored by a single industrial sponsor to help direct funding into more neutral courses funded by multiple industry sources. They are also proposing more formal communication with their counterparts at the Congress of Neurological Surgeons, with reciprocal liaisons and a shared calendar, so that there is less overlap and conflict in courses over the year. The **Neurosurgery Research and Education Foundation** (**Amanda Muhs Saratsis, MD** Liaison) awarded 7 resident awards and 3 young clinical investigator awards this year, together with 7 post-residency clinical fellowships. Of note, the NREF is rolling out an entirely new structure to the committee this summer in order to streamline donations and improve the resulting research. The new structure will be formally announced at the 2014 Annual Scientific Meeting in San Francisco.

Scientific Planning Committee (**Neil Malhotra, MD** Liaison, **Edjah Nduom, MD** Alternate) reported that next year's meeting planning is underway and the theme is "Expanding Neurosurgery". The abstract site will be open 5/20/2013 until 11/04/2013. The YNC will need to identify Young Neurosurgeons Luncheon speaker in the coming months. The YNC has been asked if we think a small fee (donated to the NREF) will reduce no shows if we think no shows are a problem.

Sections Division

Coordinator: **Cheerag Upadhyaya, MD**

AANS/CNS Section for Pediatric Neurosurgery (**Suresh Magge, MD** Liaison and **Lissa Baird, MD** Alternate): The Pediatric Section Annual Meeting occurred in St. Louis in November of 2012 with the theme of Safety, Efficacy, and Efficiency. It was a fully electronic meeting with 356 registered attendees, the highest number in history. The upcoming 2013 meeting will be in November in Toronto, Canada. Current initiatives of the section include evidence based guidelines for treatment of hydrocephalus; research grants for young investigators, and assessing potential pediatric modules for the N²QOD.

Section on the History of Neurological Surgery of AANS (**Suresh Magge, MD** Liaison): The History Section met in conjunction with the AANS Annual meeting. They continue to encourage young members to join the section for a small \$65 fee. The highlights of the section include an annual dinner at AANS which includes various historical topics of interest by an invited guest, the History Section meeting on Tuesday afternoon of the AANS meeting, and an upcoming issue of *Neurosurgical Focus*.

AANS/CNS Cerebrovascular Section (**Randy S. Bell, MD, FAANS** Liaison and **W. Christopher Fox, MD, FAANS** Alternate): The CV Section meeting held in Honolulu, Hawaii was a large success. Recent initiatives of the section include a response to the recent trials on interventional stroke therapy, a rollout of the new CV section website, ongoing discussions with related organizations regarding training standards and certification for neurointerventional treatment, work on national quality initiatives.

AANS/CNS Section on Tumors (**Kaisorn Chaichana, MD** Liaison): The Tumor Section initiatives include an upcoming joint meeting with the European Association of Neurological Surgeons in Tel Aviv, Israel in November 2013 with BrainLab sponsorship for an international tumor fellow.

Communications

Coordinator: **Neil Malhotra, MD**

Development Committee (**Kimon Bekelis, MD** Liaison): In the last committee meeting in New Orleans, it was reaffirmed that all the educational missions of the AANS (mainly the courses for residents in cerebrovascular,

tumor, spine, exit course, etc.) are receiving significant support from the industry. The companies are coming forth with the requested amounts and the next year is expected to be smooth in terms of funding. Strategies to attract more timely and efficient funding were also discussed.

Public Relations (Gabriel Zada, MD Liaison): The recent focus of this committee has been on the AANS website and in particular resources available to all AANS members on the site. The committee is working on developing presentations for high-impact topics, such as TBI/concussion, spine disease among others that will be available to all AANS members as resources for local lectures. There are opportunities for YNC members to help develop some of these presentations pertaining to any topics of interest.

Information Technology (Martina Stippler, MD, FAANS Liaison): AANSconnect the help of the YNC and young neurosurgeons. A survey on the website has been completed and YNC group established in AANSconnect. Current member will be asked to join. A journal club aspect of AANSconnect is in the works and YNC volunteers for this project are encouraged.

AANS Neurosurgeon (Neil Malhotra, MD Liaison): Recent issues continue to see increased readership and the conversion to electronic has been very successful. We have seen an increase in overall visits to www.aansneurosurgeon.org by 356.75%; a jump of more than 300% in unique visitors; a page view increase of nearly 300%; and a bump in average visit duration of nearly 30% between this time this year and this time last year. The current topic is “neurosurgeons and the learning curve”. If you would like to help with future articles or have ideas please bring them to my attention.

Operations

Coordinator: **Jorge Gonzalez-Martinez, MD**

Ethics (Martina Stippler, MD, FAANS Liaison): working on getting new breakfast seminar together for next AANS meeting.

Book Reviews

The Essential Neurosurgery Companion

Gasco J, Nader R

Set up in a question and answer format, *The Essential Neurosurgery Companion* is a quick reference for medical students interested in neurosurgery as well as neurosurgery residents alike. This reference starts with an introductory section covering everything from applying to neurosurgical residencies to the board examination process. Following the introduction, practical aspects of a residency are covered including the ACGME competencies, quality assessment, EMTALA, ethics, and medicolegal aspects of neurosurgery are covered. Subsequently, the book covers the essentials, from examination and presentation of patients to instruments. Finally, various topics are covered ranging from fundamental knowledge in various neurosciences to neurology and the neurosurgical subspecialties. Though largely covering the more common and high-yield topics rather than aiming to be a comprehensive text, it provides a good overview in a quick reference style of major topics in neurosurgery. This would be a useful resource for any medical student or resident in neurosurgery.

Decision Making in Spinal Care, 2nd Edition

Anderson DG, Vaccaro AR

Decision Making in Spinal Care is a concise, thorough, and easy-to-read reference for the care of spinal disorders. Presenting a comprehensive review of spinal pathology, this user friendly reference is divided by topics ranging from spinal trauma to degenerative diseases, to spinal deformity, and finally tumors, infections and inflammatory

processes as well as minimally invasive techniques. Additional topics relevant to the treatment of spinal disorders such as treatment of osteoporosis, spinal monitoring, pain treatments, and spine emergencies are covered as well. Each chapter begins with an easy to follow algorithm for workup and intervention, delineating the recommended imaging studies, and intervention strategies for the various pathologies. A concise chapter follows the algorithm discussing examination strategies, imaging, and diagnostic testing, treatment, complications, and outcome. I have found it a useful quick reference while on call, and a valuable resource for neurosurgeons of all levels. It is a valuable addition to any neurosurgical library.

Measurements in Spine Care

Chapman JR, Lee MJ, Hermsmeyer JT, Dettori JR, Norvell DC

Measurements comprise a nuance of spine care critical to any individual interested in a career in spine surgery. *Measurements in Spine Care* is a one-stop resource for this. The book covers all measurements, inclusive of clinical measurements and laboratory measurements, but largely focuses on radiographic measurements of the spine. It divides these radiographic measurements into fracture/dislocations, diseases, and deformity. The details provided are augmented with illustrations to improve understanding. Each measurement is given a score based on scientific characteristics such as inter- and intraobserver reliability and specificity as well as the clinical utility to assist readers with clinical application of these measurements. It is a valuable resource for any neurosurgeon with an interest in spinal disorders.

Color Atlas of Cerebral Revascularization

Spetzler RF, Rhoton AL, Nakaji P, Kawashima M

Written by several of the masters of neurosurgery, the *Color Atlas of Cerebral Revascularization* is a comprehensive, illustrative resource of intracranial vascular bypass surgery. The book is divided by anatomical bypass locations such as ACA, STA-to-MCA, MCA-to-MCA, MMA-to-MCA, Cervical Carotid-to-MCA, and STA-to-PCA to name just a few. Each anatomical bypass is demonstrated using a case-based format for different pathological entities. Each case includes illustration to clearly demonstrate the craniotomy, bypass result, pre- and post-operative angiographic results inclusive of the angiogram and three-dimensional reconstruction of the angiogram, and intraoperative photographs with side-by-side illustrations to highlight the bypass location. This multi-modal demonstration of the bypass techniques inclusive of several examples of each for most bypasses is a fantastic resource for any neurosurgeon, particularly those with an interest in cerebrovascular diseases.

This book comes with additional online bonus content in the form of 34 videos demonstrating surgical technique and intraoperative demonstration videos to supplement many of the cases depicted in the book. This book is a valuable addition to any neurosurgeons library.

Video Atlas of Intracranial Aneurysm Surgery

Nussbaum ES

The *Video Atlas of Intracranial Aneurysm Surgery* by Nussbaum is a multimedia operative atlas demonstrating operative approaches for intracranial aneurysms. The introductory chapter discusses varying craniotomy options as well as operative corridors. The following seven chapters discuss each separate aneurysm location and nuances necessary for treatment for varying aneurysm configurations. Each chapter includes several intraoperative videos to augment the already comprehensive figures in the text which include intraoperative photographs, angiograms, three-dimensional angiogram reconstructions, and illustrations. The final two chapters discuss special considerations for giant aneurysms and bypasses as well as previously treated aneurysms, and complication avoidance.

The additional 54 videos available online demonstrate the techniques described in the chapters and transform this already comprehensive resource into a must-have for any neurosurgeon's library, in particular those interested in cerebrovascular surgery.

Interventional Stroke Therapy

Jansen O, Brueckmann H

This reference most suited for neurosurgeons pursuing an interest in endovascular stroke therapy represents a comprehensive resource covering everything from anatomy to imaging to intervention. Divided into four major sections, *Interventional Stroke Therapy* begins with a discussion on neuroimaging strategies for the various stroke pathologies. It continues to describe current therapies in treatment of acute ischemic stroke, acute venous occlusions, and finally discusses intracranial stenosis. Each chapter is well-organized and comes complete with angiographic and other imaging to describe the pathology being discussed. It is a valuable resource for neurosurgeons with a focus on stroke therapy.

Comprehensive Board Review in Neurology

Borsody MK

Written in an outline format, *Comprehensive Board Review in Neurology* covers topics ranging from epilepsy to movement disorders to metabolic diseases. It represents a comprehensive review of neurology topics complete with images demonstrating microscopic pathology, relevant molecular biology, imaging, and descriptive illustrations. The topics are high-yield and comprehensive, and would be a beneficial addition to any neurosurgeon preparing for the written board exam.

Essentials of Spinal Cord Injury

Fehlings MG, Vaccaro AR, Boakye M, Rossignol S, Ditunno JF, Burns AS

Essentials of Spinal Cord Injury is a comprehensive resource for any neurosurgeon with an interest in spinal cord injury and treatment. The first section discusses principles of spinal cord injury with chapters on anatomy, imaging, pathophysiology, evaluation, management, and post-injury concerns. The second section discusses various controversies in management of spinal cord injury from timing of intervention to management of various types of injuries. Neuroprotective and neuroregenerative approaches discussing the ongoing research in spinal cord injury and treatment comprise the third section, followed by imaging and neurophysiology, and finishing with plasticity and recovery. Each topic begins with key points that clearly delineate the learning goals for each chapter. Literature comparisons are well-organized in charts and include grading of the existing studies for quick evaluation. Overall this comprehensive resource can be a one-stop guide to management of spinal cord injury and is a valuable addition to any neurosurgeon's library.

Case-Based Brain Imaging

Tsiouris AJ, Sanelli PC, Comunale JP

Case-based learning has proven effective in medical education, and *Case-Based Brain Imaging* takes full advantage of this approach. Divided into broad category of diseases, each chapter focuses on a single pathology. The chapter includes a clinical presentation, relevant radiographic images, diagnosis, and differential diagnosis, background of the disease process, pathology, imaging findings, treatment, and prognosis. Topics are presented in a reader-friendly format and this is a useful quick reference for a broad overview on a given diagnosis. It is a useful addition to a neurosurgery resident's library.

This resource comes with an additional 250 online cases to augment the material presented in the book.

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