



Chairman's Message by Edward Smith, MD, FAANS

By way of introduction, I am **Ed Smith** – the unlucky individual attempting to fill the rather large shoes of former Young Neurosurgeons Committee (YNC) chairman **Ed Vates**. (We decided to keep the same first name to minimize confusion amongst the committee.) I want to start by recognizing the excellent work done by **Ed Vates** – and his predecessors – in building the YNC into the relevant, active organization that it has become. **Ed** (along with **Jon Friedman** and others before him) have consistently put tremendous effort into developing the YNC, reaching out to constituents and being responsive to their needs, while weathering the incredible changes over the past several years – in the economy (affecting our funding), the organization of the AANS and the evolving role of neurosurgery. Each of these challenges has been met as an opportunity, and the result has been a stronger and more dynamic YNC.

Going forward, I am excited to continue the efforts initiated by **Dr. Vates**, while also exploring new areas of growth for our group. As we head to Washington for our upcoming meeting, we are – as always – presented with a host of issues to address. While the Monday night agenda will cover a broad range of topics, ranging from Top Gun planning, to international medical student involvement, to engaging with senior leadership (both in the AANS and in our national government), I think that this inaugural letter should proffer a more focused message.

Specifically, I think that it is important to emphasize the very “raison d’etre” of the YNC. This group – unique among professional medical organizations – exists to serve the needs of the young and developing members of our profession. The AANS has made a sincere effort to address the needs of the newest members of field of neurosurgery by creating a forum to voice current issues, communicate concerns to senior leadership and facilitate participation in our chosen field on a national level.

It is inspiring to see the hard work performed by members of the YNC and it is remarkably refreshing to experience the idealism common to this group. We are the future of organized neurosurgery and those that participate in the YNC will be able to offer their voice and their guidance to direct the course of our profession. It is easy to become jaded in medicine – especially in 2011 with all of the demands and challenges we face on a daily basis at work. Nonetheless, inspiration exists to sustain us through these enervating experiences. Time spent in the YNC can remind us why we chose this field – the excitement, interest, and idealism that are strongest in the newest colleagues can inspire us to engage ourselves more than we might otherwise do.

As the new chairman, I invite you to join us at our meeting. I would challenge you to become a part of the YNC. Start a Think First chapter in your institution. Participate in the Neurosurgical Top Gun Challenge. Recruit medical students into neurosurgery. Remind yourselves why you love your profession and channel that enthusiasm to grow our field. I am excited to be a young neurosurgeon – we enjoy the best of all callings in professional life. I look forward to renewing my relationships with those I know and meeting new folks who are eager to share the greatness of neurosurgery. Together, we will shape the future of our field.



YNC: Creating Opportunities Stacey Quintero Wolfe, MD

The Young Neurosurgeons Committee is a committee of the AANS designed to serve, develop, and represent those who are beginning their neurosurgical careers. From students to residents to new faculty, the YNC provides countless opportunities for early involvement in organized neurosurgery. Through serving on YNC subcommittees, early participation of young neurosurgeons in the AANS committee structure, and promoting participation in the annual AANS scientific program, the YNC produces the upcoming leaders of neurosurgery.

The YNC functions in two different capacities: by serving the AANS through the YNC subcommittees, and by providing young neurosurgeons with pertinent information regarding the AANS, including the activities of the Board of Directors, CSNS, Washington Committee, Sections, and other key AANS committees. The YNC serves the AANS membership through the following subcommittees dedicated to the needs of our constituency:

AANS Marshals Committee
Medical Student Task Force
Neurosurgical Top Gun
Real World Course

Softball Tournament Fundraising
YNC Public Service Citation
Young Neurosurgeons' News
Young Neurosurgeons' Luncheon

These subcommittees function only with the participation and hard work of the YNC members, but allow the YNC to assist with order and efficiency during the annual meetings through the Marshals, provide practice mentorship for young neurosurgeons with the Real World Course and Young Neurosurgeons' Luncheon, to facilitate research funding through fundraising for the Softball Tournament, to hone surgical skill through Neurosurgical Top Gun, to encourage the development of new neurosurgeons through the Medical Student Task Force and to recognize the achievements of our colleagues with the YNC Public Service Citation.

In addition, the YNC provides the opportunity to serve as a liaison to nearly every AANS section and committee, as well as affiliated groups. These opportunities are invaluable, as the young neurosurgeon begins to learn firsthand about the inner workings of the AANS and work closely with leaders in every field of neurosurgery. The YNC sends a member for a one to two year term to each of the following:

AANS Committees	Sections	Affiliate Organizations
Board of Directors Development CME/Maintenance of Certification Ethics Information Technology (iTough® Task Force) International Outreach Member Benefits, NREF Public Relations Scientific Planning	Cerebrovascular History Pain Pediatric Spine Stereotactic Trauma Tumor	Joint Washington Committee Think First WINS CSNS

The YNC provides an amazing opportunity for students and residents to rise in the ranks of neurosurgery. I had the opportunity to join the YNC 5 years ago after having become involved in organized neurosurgery through the CSNS Socioeconomic Fellowship. I was mentored and introduced to the YNC by an outstanding group of young and experienced neurosurgeons, who encouraged me to excel not only as a surgeon, but as a leader.

I first began as a member of the Marshals, taking tickets at each session and meeting many giants in our field, a humbling experience for a young resident! I had a similar experience as the liaison to the Development Committee and was awed as I sat between those whose textbooks I was reading. These masters of neurosurgery did not simply ignore me as an inexperienced resident, however, but encouraged my participation and solicited my opinion as a young neurosurgeon. Through the Development Committee, ethical interface of neurosurgery and industry was fostered, with the result of multiple resident courses hosted annually by the AANS as well as fellowship grants. What a privilege to have been even a small part! As chair of the Marshals, I was able to participate in the iTouch® initiative and help facilitate the first paperless neurosurgical meeting, with direct interaction with the President of the AANS. Now I am again humbled to serve as the YNC Secretary.

I highlight my journey to illustrate the many opportunities that are available and attainable through the YNC. While I would love to detail the amazing work of each of the aforementioned committees and organizations, space does not allow me to properly exhort their importance and accomplishments. I can, however, say with assurance that our service is required for their ultimate success and that serving on any of these committees will provide extraordinary opportunities.

The YNC provides a framework for meeting colleagues, an entry point for participation in organized neurosurgery, an avenue for leadership and an easy place to find resources and mentorship. All of us have begun our journey and succeeded only with the encouragement of those who have gone before us. We strive to provide that to every young neurosurgeon and hope that you will journey with us. On behalf of the YNC Executive Committee, we would like to recognize and thank all the members of the YNC who have helped this organization flourish as a result of their hard work.

To all Young Neurosurgeons: students, residents, and faculty; we invite you to peruse this newsletter for just a taste of what we are doing. We hope that you will come to the next YNC meeting and let us help you to seize every opportunity!

**Monday, October 3, 2011
5:30 – 7:30 p.m.
Washington Renaissance Hotel
Meeting Rooms 8 and 9**

Please contact me with any questions: Stacey.Wolfe@Amedd.Army.Mil.

Committee Goodbyes and Hellos

Over its 20 year history, the YNC has been fortunate to have members who have dedicated time to their assigned roles. Term ends have come for several members who have served the committee well during their tenure:

Member	Role(s)
Andrew F. Ducruet, MD	Assistant Newsletter Editor 2007-09 Silent Auction 2009-10 Cerebrovascular Section Alternate 2009-10 Cerebrovascular Section 2010-11
Anthony D'Ambrosio, MD, FAANS	Neurosurgical Top Gun 2007-11 Tumor Section 2009-11
Christian Kaufman, MD	Education and Practice Management Committee 2008-11 YNC Division Coordinator: Education
Daniel M. Sciubba, MD	Silent Auction Chair 2009 Spine Section Alternate 2008-09 Spine Section 2009-11 YNC Division Coordinator: Sections
Graeme Woodworth, MD	Silent Auction 2007-09 Member Benefits Committee 2010-11 iTouch Task Force 2009-10
Hamad Issam Farhat, MD	History Section 2008-11
Jason M. Schwalb, MD, FAANS	CME/MOC Committee 2008-11 Pain Section 2008-10
Kendall H. Lee, MD, PhD, FAANS	Stereotactic and Functional Section 2008-11 iTouch® Task Force 2009-10
Michael Lim, MD	Marshals 2007-09
Todd Hankinson, MD MBA	AANS Neurosurgeon 2010-11 Silent Auction Chairman 2010

Many of these young neurosurgeons have matriculated from residency and fellowships to being attending neurosurgeons during their time on the YNC and have generously shared their time serving the liaison groups to which they were assigned. Some have become voting members of their committees and others have migrated to being members of their section's executive committees. This dedication to service is why YNC liaisons are good for organized neurosurgery and why organized neurosurgery is good for young neurosurgeons.

The YNC welcomes their newly elected members and eagerly looks forward to working with them:

Maya Anantha Babu, MD MBA
Randy S. Bell, MD
W. Christopher Fox, MD
Jorge Alvaro Gonzalez-Martinez, MD PhD
Suresh N. Magge, MD
Neil R. Malhotra, MD

Edjah Kweku-Ebura Nduom, MD
Francisco A. Ponce, MD
Martina Stippler, MD
Ashwin Viswanathan, MD
Cheerag Dipakkumar Upadhyaya, MD

Celebrating 25 Years: ThinkFirst Bike Helmet Giveaway

Krystal Tomei, MD

In 1986, the AANS and CNS initiated the development of ThinkFirst due to their concern for patients with brain and spinal cord injuries. With the shared belief that prevention is the only cure to these injuries, ThinkFirst has been leading injury prevention through education, research and policy. ThinkFirst celebrated 25 years of injury prevention with the Community Kids Bike Helmet Day at INVESCO Field, held this spring at the AANS Annual meeting in Denver.



I had a unique opportunity to participate in this event, which brought over 200 children in Denver to be fitted with free bike helmets by AANS and ThinkFirst Chapter members from across the nation. The event featured bike helmet fittings, games and educational activities on injury prevention. Saul Raisin, a professional cyclist who suffered a traumatic brain injury while riding, was there to discuss the importance of bike safety with the kids. It was truly amazing to see the children's faces light up while receiving their helmets, but more was in store for them.

The event featured a special guest, Denver Bronco quarterback, Tim Tebow. I have to admit, as a Florida Gator Alumna, I was probably more excited than the kids to see my former Gator quarterback, Heisman trophy winner and two-time BCS National Champion talk to them about safety. He spoke to the kids about his own experience with a concussion sustained during his senior season and stressed the importance of wearing their bike helmets. To end the day, Tim Tebow was presented with a helmet by AANS President James T Rutka. All in all the day was a huge success and only represents a small amount of what our partnership with ThinkFirst may accomplish.

I had the fortune of working with ThinkFirst last year while taking my research year to obtain an MPH up at Harvard. ThinkFirst is composed of local chapters, many founded by neurosurgeons, which aim to educate the community on injury prevention and educate young people about their personal vulnerability and the importance of making safe choices. They utilize educational programs specifically designed for different age groups and the injuries to which those groups are most prone. Now that I have returned to my program, I am working to start a local ThinkFirst chapter at my hospital. As neurosurgeons, we see all too many preventable injuries. It is our duty not only to treat, but also to educate and prevent. If you're interested in serving your community by starting or participating in a ThinkFirst chapter, you can get more information at www.thinkfirst.org.

CSNS Socioeconomic Fellowship

Maya Babu, MD

The Council of State Neurosurgical Societies (CSNS) was created over 40 years ago as the forum in which day-to-day neurosurgical practice issues are discussed and timely policy, such as liability reform and pay for performance, are debated. The CSNS creates an avenue for practicing neurosurgeons to discuss important practice topics that warrant further study and bring this to the attention of the Neurosurgical Societies for action.

The Socioeconomic Fellowship program of the CSNS is an avenue through which training neurosurgeons can learn and become involved in the socioeconomic side of neurosurgery. The first class of 12 fellows were selected in 1999, funded by a grant from Medtronic (Sofamor Danek). The goal of the CSNS Socioeconomic Fellowship is to train residents to gain competence in and understanding of the full range of socioeconomic issues impacting neurosurgery. Specifically, the fellowship seeks to uphold the following tenets: (1) *Patient Care*: skills to

appropriately integrate socioeconomic factors into neurosurgical practice in developing and implementing patient treatment plans; (2) *Medical Knowledge*: comprehension of socioeconomic issues within neurosurgery including workforce, medical liability, coding/reimbursement, and medical practice issues; (3) *Practice-Based Learning and Improvement*: serve as a resource for socioeconomic education in residency as well as for regional/state neurosurgical societies (4) *Interpersonal and Communication Skills*; (5) *Professionalism*; (6) *Systems-Based Practice*: demonstrate an understanding of the administrative and financial aspects of neurosurgery practice

As part of the year-long fellowship, residents attend two consecutive CSNS meetings, actively participate in a standing committee for 1 year and develop at least 1 educational program for their own residency program, the CSNS website, or a state neurosurgical society. The CSNS as an organization has been a leader in terms of nurturing and developing talent among young neurosurgeons. Unlike many medical organizations who welcome residents but don't extend full membership until after completion of training, the CSNS is unique in that it allows residents to attain full voting privileges.

One of the best aspects of the fellowship experience is the opportunity to be paired up with two mentors, a delegate mentor and a past fellow mentor. My delegate mentor, Dr. Ann Stroink, has been a great resource and adviser, not only about the CSNS, but she has also made herself available to answer questions about day-to-day challenges in residency and has been a wonderful source of support. My past fellow mentor, Dr. Ronnie Hammers, has given me a unique perspective on the CSNS as a previous fellow; he has encouraged me to pursue opportunities that he would have taken fuller advantage of. During my time in this fellowship, I was able to investigate and research several neurosurgical issues which led to oral presentation before the CSNS body and peer-reviewed publication. As I became further involved with the CSNS, the relationships that I formed led to further opportunities in organized neurosurgery, including the Young Neurosurgeons Committee.

The CSNS Socioeconomic provides invaluable opportunity and growth for a neurosurgical resident. I would encourage you to apply for a CSNS fellowship; if you have any questions, please do not hesitate to reach out: mayababu@gmail.com.

ANNUAL NEUROSURGERY CHARITY SOFTBALL TOURNAMENT

Ricardo J. Komotar, MD

Twenty-four teams of neurosurgeons from top medical institutions competed June 4th in Central Park at the 8th Annual Neurosurgery Charity Softball Tournament (www.NeuroCharitySoftball.org). Endorsed by the American Association of Neurological Surgeons, hosted by Columbia University, with fundraising assistance by the Young Neurosurgeons Committee, the event benefited brain tumor research via the Neurosurgery Research and Education Foundation of the AANS. This year's competing Departments of Neurosurgery included Alabama, Albert Einstein, Barrow Neurological Institute, Colorado, Cornell / Memorial Sloan-Kettering, Dartmouth, Duke, Emory, Florida, Harvard, Hopkins, Miami, Mount Sinai, Northwestern, NYU, Penn, Penn State, Pittsburgh, Jefferson, Toronto, and Utah. The playoff field included Cornell/MSK and Columbia from the New York division; Alabama and Emory from the South division, Barrow and Pittsburgh from the West division, and Penn and Harvard from the East division. The Final Four teams were Emory, Alabama, Barrow, and Penn. The Barrow claimed their second consecutive championship by beating Alabama in the finals.



Annual Neurosurgery Charity Softball Tournament – 2011 Champions, Barrow Neurological Institute

The Annual Neurosurgery Charity Softball Tournament has rapidly evolved into an international competition, with Toronto joining the field in 2010. The first two championships were claimed by Columbia University in 2004 and 2005, while the University of Pennsylvania repeated their title runs in 2006 and 2007. Harvard followed by winning in convincing fashion during the 2008 tournament. Columbia won their third overall championship in 2009 and the Barrow has won in 2010 and 2011. The championship trophy, named "The J. Lawrence Pool Memorial Trophy" in honor of the former Columbia chairman, will be housed in Phoenix for another year.

For the eighth consecutive year, the Steinbrenner family and the New York Yankees have sponsored the tournament. Supported by Mayor Michael Bloomberg, this date has been declared "Neurosurgery Charity Softball Tournament Day" in the City of New York. The Annual Neurosurgery Charity Softball Tournament has become a tradition within the neurosurgical community and represents the amiable competition, social camaraderie, and charitable nature within our field. In particular, the dedication of participating programs, particularly traveling teams, has been impressive. Partnership with the American Association of Neurological Surgeons has been instrumental for transitioning from an institutional effort to an international initiative, with this collaboration allowing funding to support NREF neuro-oncology research fellowships. The planning has already begun for the games to continue next year in June 2012 at the 9th Annual Neurosurgery Charity Softball Tournament, with potentially an expanded field of 30+ teams across the US and Canada.

Neurosurgical Top Gun

For six consecutive years, the Young Neurosurgeons Committee has offered a skills competition for residents and fellows at the AANS Annual Scientific Meeting. This year's Neurosurgical Top Gun event included stations such as

image guided lumbar pedicle screw, bone scalpel, virtual thoracic vertebroplasty, brain tumor debulking and ventriculostomy simulator. Due to the generous support of corporate supporters, awards were given to the Neurosurgical Top Gun, his institution and to each individual station's top score.

Honors were bestowed upon these deserving awardees:

- **Overall Top Honors (the Neurosurgical Top Gun)** : Jason Rahal, MD – Tufts Medical Center (residency ends June 2015)
- **Institutional Top Honors**: Tufts Medical Center
- **Top Honors for the Lumbar Pedicle Screw Station**: Jason Rahal, MD – Tufts Medical Center (residency ends June 2015)
- **Top Honors for Bone Scalpel Station**: Laszlo Entz, MD (resident) - Semmelweis University – Budapest
- **Top Honors for the Lumbar Vertebroplasty Station**: Amit Singla, MD - State University of New York – Syracuse (residency ends June 2014)
- **Top Honors for the Ventriculostomy Station**: Jason Rahal, MD – Tufts Medical Center (residency ends June 2015)
- **Top Honors for the Brain Tumor Debulking**: Gregory Hawryluk, MD – University of Toronto (residency ends June 2012)

Supporters of this year's innovative competition were Anspach Companies, Aesculap Inc., Codman, a Johnson & Johnson company, DePuy Spine, a Johnson & Johnson company, Medtronic, Immersive Touch, National Research Council of Canada, and University of Florida.

Thanks to everyone who participated and contributed!

Book Reviews

The Human Brain in 1492 Pieces: Structure, Vasculature and Tracts

Nowinski WL, et al. Thieme: 2011

Reviewed by **Stacey Quintero Wolfe, MD**

The intricacies of the human brain make neurosurgery one of the most difficult and demanding specialties. In an incredible feat of science and technology, *The Human Brain in 1492 Pieces* is an amazing tool that gives us a glimpse of the depth of brain anatomy.

The Human Brain in 1492 Pieces is a virtual cadaveric specimen, available for dissection over and over again. This computer program depicts nearly every anatomical structure of the brain in 3-D format. The cortex, white matter tracts, deep structures, ventricles, veins and arteries down to 80 microns can be rotated, flipped, and removed with a simple click of the mouse, allowing for in-depth study of anatomical relationships. By simply rolling the mouse over a structure, it is identified, even down to tiny cortical arteries. No longer is it necessary to puzzle over a figure legend or flip through multiple pages in order to find a labeled structure!

This program is very self-explanatory and easy to use. It runs smoothly without hiccups in the system. The subsystems of arteries, veins, white matter tracts and brain structures can be viewed independently or in any combination. Multiple cutting planes facilitate dissection. It can be reset to its original view with a single stroke, or saved in any permutation for use in study and presentations.

While it is currently only available for a PC, we are hoping that it will soon be available for MAC. Additionally, it is our great hope that this technology will eventually be able to be used to synthesize actual patient pathology with the 3D model for pre-operative planning. Though these are ideas for the future, this current program is nothing short of amazing, and is a must for all who require an understanding of the human brain, from student to professor.

Neurosurgery Rounds: Questions and Answers

Shaya MR. Thieme: 2011

Reviewed by **Stacey Quintero Wolfe, MD**

Since the days of Harvey Cushing, students of neurosurgery have learned the vast majority of their knowledge during patient rounds. It is during that time, that hours of study are synthesized into a diagnosis and treatment plan for the individual patient. This book is an excellent compilation of many of the questions asked at the bedside.

Neurosurgery Rounds: Questions and Answers is a pocket sized book of that includes over 1,600 questions and answers supplemented by instructive radiographs and illustrations. It is divided into Basic Neurosciences; including Neuroanatomy, Neurophysiology, Neuropathology and Neuropharmacology, and Clinical Neurosciences, including Cranial, Spine, Peripheral Nerve, Neurology and Neuroradiology. Each Clinical Section ends with clinical vignettes, also in a question and answer format.

As with any question-answer book, this is not a definitive source. Questions that are subject to debate or evolving may contain controversial answers that may be taken as absolute by the inexperienced reader. While most information is accurate and well-presented, there are a few topics which are incompletely presented, such as the results of the NASCIS trial presented as “significantly beneficial”¹ and the use of the 1998 ISUIA rupture risk of 0.05% for aneurysms <10mm² rather than the 2003 data. For this reason, when using this as a study guide, it is important to consult the original sources.

Despite this, *Neurosurgery Rounds: Questions and Answers* contains a wealth of information in a succinct, easy to read format that makes an excellent resource for on-the-go self-study or group review. At a very reasonable price, this book will be very valuable to any student or resident preparing for neurosurgical rounds and board examinations.

1. Bracken MB, Shepard MJ, Collins WF, et al. A randomized controlled trial of methylprednisolone or naloxone in the treatment of acute spinal cord injury. Results of the Second National Acute Spinal Cord Injury Study. *N Engl J Med* 1990; 322:1405-1411.
2. ISUIA: Unruptured Intracranial Aneurysms- Risk of rupture and risks of surgical intervention. *N Engl J Med* 1998; 339:1725-1733.

Neurosurgery Oral Board Review: Second Edition

Citow JS and Adamson DC. Thieme: 2011

Reviewed by **Stacey Quintero Wolfe, MD**

This is the second edition of an outstanding book and it only keeps improving. The oral board exam is designed to determine competency in diagnosis and management with a focus on problems that neurosurgeons can expect. This concise 246 page review book begins with an excellent section on what to expect at the oral board exam and, therefore, how best to prepare. The authors provide their own helpful hints as well as a suggested timeline on board preparation.

Each section begins with pertinent anatomy and approaches, followed by a pithy review of the most likely pathology to be encountered during the examination. The Miscellaneous topics include Pediatrics, Functional/Pain, Peripheral Nerve, Critical Care and Neuroanesthesia, and Neurology. The book ends with an analysis of each of the 45 illustrated clinical vignettes in the grading format of the oral board: Differential Diagnosis, Treatment and Potential Complications.

While obviously not a substitute for in-depth study, the Second Edition of *Neurosurgery Oral Board Review* is a worthwhile addition to your oral board exam study material. With the new format and case reviews in the oral board structure, this will significantly improve your understanding of the test and focus your preparation.

Endoscopic Spine Procedures

Kim DH, Choi G, Lee SH. Thieme: 2011

Reviewed by Matthew Cage, MD and Stacey Quintero Wolfe, MD

Endoscopic Spine Procedures is a comprehensive guide to percutaneous endoscopic spine surgery, specifically in the area of discectomy. In an era of improving technology, minimally invasive techniques can offer patients decreased tissue disruption leading to faster recovery time. Although endoscopic techniques are fairly new to neurosurgery, this text offers not only an instruction manual but also a discussion of outcomes and complication avoidance.

This book consists of 268 pages arranged into four sections: Principles and Essentials of Percutaneous Endoscopic Spine Surgery followed by Percutaneous Endoscopic Discectomy of the Cervical, Thoracic and Lumbar Spine. Additionally, it comes with a DVD containing 19 case illustrations corresponding to the four different approaches to percutaneous endoscopic discectomy in the lumbar spine.

The opening section of this book reviews the history of minimally invasive spinal surgery and highlights the advancements in endoscopic instrumentation, including the use of lasers. The remainder of the text is devoted to surgical technique of percutaneous endoscopic discectomy of the cervical, thoracic, and lumbar spine. Each section begins with surgical anatomy and numerous illustrations to assist both novice and experienced spine surgeons alike. A step-by-step description of the surgical technique follows, with comprehensive, yet easily comprehensible, descriptions, radiographs, and operative pictures. Each section then discusses and nicely illustrates multiple case presentations. Most importantly, each section devotes a chapter to complication avoidance.

While this book does an extraordinary job of outlining the surgical history, technique, and nuances of percutaneous endoscopic discectomy throughout the vertebral column, it deals with highly focused subject material. Although titled *Endoscopic Spine Procedures*, it deals solely with discectomy. Understandably, the largest portion of the book is devoted to endoscopic techniques of the lumbar spine due to the more frequently encountered pathology and array of available approaches, although the cervical and thoracic portions are also excellent.

Endoscopic Spine Procedures provides an excellent surgical atlas for the technique of percutaneous endoscopic discectomy, from the operating room set-up and anesthetic considerations, to operative techniques and complication avoidance. It is a well written, insightfully organized text of an advanced surgical technique that will assist any spine surgeon looking to learn or perfect this endoscopic procedure.

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American Association of Neurological Surgeons
5550 Meadowbrook Drive
Rolling Meadows, Illinois 60008

Phone: (847) 378-0500
Fax: (847) 378-0600
E-mail: info@aans.org
Web site: www.AANS.org



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