



Neurotrauma and Critical Care

Head Injury Spinal Cord Injury Sports Medicine Critical Care Prevention

Editor: Donald W. Marion, MD, Secretary of the Joint Section

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Section Leadership

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Toronto, ONT

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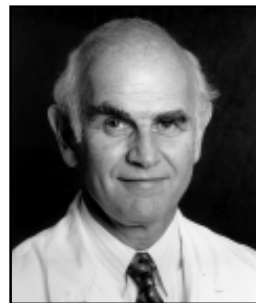
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Donald W. Marion, MD
Pittsburgh, PA

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Alex B. Valadka, MD
Houston, TX

Message from the Chairman



Charles H. Tator, MD

Socioeconomic Issues in Neurotrauma

One of the aims of the Joint Section is to assist neurosurgeons to provide excellent neurotrauma care in North America, and the Joint Section is working hard to fulfill this aim. We have been assisted in this area by the Council of State Neurosurgical Societies (CSNS), and especially by Dr. John McVicker, the Chairman of the newly formed Neurotrauma Committee of the CSNS. The "white paper" developed by this Committee is an excellent overview of the practical problems encountered during the delivery of neurotrauma care, including coverage of hospital emergencies, response to trauma calls, and reimbursement for these

activities. We shall assist this Committee in responding to these challenges.

In every aspect of the trauma field, neurosurgeons interact with a large number of "other players", including a variety of other surgical specialists such as general surgeons, orthopedic surgeons, plastic surgeons, and a large number of non-surgeons, such as neurologists, radiologists, emergency physicians, critical care specialists, psychiatrists, nurses and therapists. No other neurosurgical subspecialty requires the neurosurgeon to interact with so many others, many of whom are essential components of the neurotrauma diagnostic and treatment team. Each of these other groups has its own view of the field and its own expectations of neurosurgery. We continually come under scrutiny by these groups. In most cases, we perform well. It is the responsibility of each neurosurgeon in the trauma field to continually examine these interactions. A proactive stance is important. We must maintain a leading role in neurotrauma based on the comprehensive training we receive in neurotrauma, the excellence of the care we offer, the leadership we provide, our knowledge of the basic and clinical sciences of neurotrauma, and the fact that brain and spinal cord injury are the leading causes of trauma related mortality and morbidity. Perhaps, training is the key element, including training during residency, and thereafter, in order to maintain expertise. As in other areas of medicine, the usual modus operandi is "if you are trained to do something, you will be deemed eligible to do it by your peers, payors, and the general public."

Sports Medicine Activities

Neurosurgeons continue to contribute in a meaningful way to the sports medicine field. However, more neurosurgeons are needed to play a role in the prevention, diagnosis and treatment of sports and recreational injuries to the brain, spinal cord, and peripheral nerves. Other specialists are only too eager to fill the gap if we fail to lead or even participate. For example, orthopedic surgeons will continue to write chapters on head injury management in the sports medicine books, or give a lecture to team trainers on spine injuries if we fail to show up to coach the teams, do the research, and write the reports. Julian Bailes, MD, is organizing another meeting on brain and spinal cord injuries in sports in Orlando, March 6-8, 1998, and

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Message for the Chairman (continued from previous page)

hopefully many neurosurgeons will attend. Those who attended last year benefited greatly. Thanks to people like Julian, Art Day, MD, Bob Cantu, MD, Mike McWhorter, MD, Dave Kline, MD, and others, neurosurgery continues to play a useful and credible role in neurotrauma related to sports medicine.

Critical Care

We continue to be under siege from other specialists in the critical care field. Many private neurosurgical practitioners and academic neurosurgeons have had to give up their primary role in critical care. Survival of the neurosurgical-led critical care unit depends mostly on the training, knowledge, interest, and clout of the neurosurgeon. Programs which have trained neurosurgical staff that can provide resident training in critical care will continue to be allowed to function as leaders in critical care with neurosurgically run critical care units. Dr. Michael Rosner's Critical Care Committee is working on a training curriculum in critical care for neurosurgical residents. The first draft of this document is expected to be reviewed and approved by the Section Executive Committee in Philadelphia in April, and then by the Officers of the AANS and CNS. It should be ready for presentation to the Program Directors at the May meeting of the Society of Neurological Surgeons in St. Louis.

The Joint Section continues to sponsor the practical course "Critical Care for the Neurosurgeon" at the AANS and CNS meetings. Brian Andrews, MD, and Alex Valadka, MD, put on an outstanding course in New Orleans at the CNS meeting. Michael Rosner, MD, continues to direct the critical care course sponsored by the AANS Professional Development Committee. Neurosurgeons must keep abreast of contemporary critical care or they will lose their Neurosurgical Intensive Care Units.

Neurotrauma Research

The Joint Section has embarked on a program to stimulate research in neurotrauma. The first Neurotrauma Resident Research Award for the best abstract submitted was awarded at the CNS Annual Meeting in New Orleans. A decision was made in New Orleans to change the name to the "Neurotrauma and Critical Care Young Investigators Award". All neurosurgical residents, fellows and junior staff within the first 3 years of completion of their training will now be eligible. The Neurotrauma and Critical Care Fellowship was reinstated by the Joint Section and will start in July 1998. This \$40,000 fellowship will be funded entirely by the Joint Section for the first 2-3 years. Corporate or foundation support will be needed to sustain the fellowship beyond that time. If you know of a potential donor, please contact Jack Wilberger, who has kindly taken on the task of administering the Award and Fellowship for the Joint Section.

In conjunction with the Joint Section on Spine, the STASCIS group (Surgical Treatment for Acute Spinal Cord Injury Study) has conducted two pilot clinical trials and one imaging study. The most recent STASCIS protocol aims to examine neurological recovery after early (within 12 hours) and later (after 24 hours) decompression. This protocol was submitted to the National Institute of Health (NIH) on October 1st for funding through NIH's recently an-

nounced "Pilot Clinical Trial" program. The STASCIS group has been working on this project for the past 3 years. A modest amount of start-up funds has been provided by the Joint Section on Neurotrauma and Critical Care and by the Joint Section on Spine and Peripheral Nerves. However, we have now reached a stage where we require additional funds from NIH for the work to proceed.

Education

Ross Bullock, MD, Chair of the Head Injury Subcommittee, and Larry Pitts, MD, Head of the American Brain Injury Consortium (ABIC), co-chaired a very successful symposium on head injury trials which examined contemporary outcome measures. Approximately 150 registrants were at this meeting, which was held as a satellite symposium preceding the CNS Annual Meeting in New Orleans. There were representatives from NIH, other government agencies, and many pharmaceutical companies. It is hoped that this conference will result in improved head injury trials.

Ross Bullock is planning a head injury teaching video directed toward medical students, residents and non-neurosurgeons and has received a preliminary commitment for sponsorship from a pharmaceutical company. This promises to be an excellent educational tool. Copyright and ownership issues will be discussed with the AANS and CNS executive boards.


Our Section does not have an annual free-standing meeting. Therefore, we should take every opportunity to include Neurotrauma, Critical Care and Sports Medicine topics in the Annual Meeting programs of the AANS and CNS. The meeting organized by Ross Bullock and Larry Pitts is an excellent example of how to develop a neurotrauma specialty meeting in association with the Annual Meetings. Please contact a member of the Executive Committee if you have an idea for a neurotrauma meeting of this type.

Guidelines

Our Section is participating in the development of several new guidelines in the neurotrauma field. We have provided half the funds required for providing copies of the Severe Head Injury Guidelines to all new members of the AANS. We have established a policy of having the Joint Section Executive Committee review all new Guidelines relating to neurotrauma and critical care if the guidelines authors wish to have the imprimatur of the AANS/CNS.

Membership

There currently are 923 members of the Joint Section on Neurotrauma and Critical Care. We are offering free membership to neurosurgical residents. We should all encourage residents to join, especially those with a practice, research, or educational interest in neurotrauma or critical care.



Charles H. Tator, MD, PhD, FRCS(C)
Chairman

Project Implements Severe Head Injury Guidelines in Eastern Europe

Study Will Help Measure Effectiveness of Guidelines

By Jam Ghajar, MD

The *Guidelines for the Management of Severe Head Injury*, authored by members of the AANS/CNS Joint Section on Neurotrauma and Critical Care, and supported by the Brain Trauma Foundation (now incorporated into the Aitken Neuroscience Center in New York City) and The American Association of Neurological Surgeons (AANS), were sent to every neurosurgeon in North America in 1995. This was the first set of guidelines for organized neurosurgery and is being nurtured carefully by the AANS/CNS Guidelines Committee in an effort to demonstrate that this process can be duplicated for other neurosurgical indications and proven to have efficacy. The publication of the *Guidelines* is just one component of the entire guidelines process. While considerable efforts and funds were expended to develop the *Guidelines*, the most challenging tasks are implementation and evaluation of efficacy of the *Guidelines*.

The implementation and proof of efficacy of this document were given a jump start last year when George Soros, a well known philanthropist and founder of the Open Society Foundation, became interested in the case of a woman who suffered a severe head injury in New York's Central Park. He was particularly interested in the guidelines process and the public health aspects of traumatic brain injury (TBI). The Open Society Foundation in New York reviewed a grant proposal from the Aitken Neuroscience Center to establish a prospective head injury database and implement the Guidelines in 15 countries of Central and Eastern Europe. The five year multimillion dollar grant was approved last year and the first visit to Budapest, Hungary was in May, 1997. Approximately three countries per year will participate in the *Guidelines* implementation and database. This year, Hungary, Slovakia, Slovenia and Croatia are involved.

The objectives of the Aitken-Soros Eastern Europe project are:

- 1) To establish TBI centers of excellence in each country of Central and Eastern Europe.
- 2) To develop and implement an interactive Internet database which will track practice and patient parameters from the time of injury through six month outcome.
- 3) To document patient assessment, treatment and outcome before and after implementation of the Guidelines.
- 4) To establish demonstration and training sites for other trauma hospitals surrounding the TBI centers in each country.

Head injury is a major cause of disability and death in Central and Eastern Europe where seatbelts are rarely used, air bags are uncommon, and most roads outside the major cities are in poor condition and are heavily used. The rationale for implementing the *Guidelines* in these countries is that early intensive care will translate into better outcomes and long-term economic savings. In these emerging economies the burden of long term care for severely disabled

survivors of traumatic brain injury diverts funds from other pressing medical needs.

Selection of trauma hospitals in each country is based on a survey which selects for:

- 1) A major trauma hospital usually located in the capital city that has a dedicated neurosurgery team.
- 2) Incidence of severe head injury (GCS < 8) usually greater than 100 patients per year.
- 3) Full time availability of one neurosurgeon and one critical care physician to enter data and maintain the head injury database.

Since May, 1997, members of the Aitken staff, including an administrator, neurosurgeon, critical care physician and computer/Internet database specialist, have visited four countries (Hungary, Slovakia, Slovenia and Croatia) and enrolled seven hospitals. Our site visits included the city ambulance center, interviews with the hospital administrators, and a detailed tour of the hospital's resources including CT scanner, ER, ICU, neurosurgery OR, ward and rehabilitation facility.

In each of the seven hospitals a neurosurgeon—usually the junior attending who has just finished residency—has been selected and funded for a full time Aitken fellowship to track TBI patients. These neurosurgery fellows were each given an IBM laptop computer and instructed on how to enter data over the Internet. In addition, they were given scanners so that head CT scans obtained on admission, following surgery, and at 10 days after injury can be scanned and sent over the Internet. A reliability study is in progress with the American Society of Neuroradiology to compare hard copy CT scans with the Internet transmitted images. The computer/Internet database specialist identified Internet servers in each country and assisted with connection of the field units to the server.

The Traumatic Brain Injury Internet database is organized into four tasks as follows:

TASK ONE: Patient admission data. Patient identification is kept confidential and is not transmitted over the Internet. This task has inclusion criteria, mode and severity of injury, initial exam date by the Clinical Research Physician (CRP- the Aitken fellow), head CT and any surgery.

TASK TWO: Ambulance data. The first three chapters of the *Guidelines* deal with trauma systems and prehospital resuscitation and treatment. The data of this task addresses those parameters.

TASK THREE: ICU data. Daily exams by the CRP, hospital ICU records, surgery and head CT scans are included in this section.

TASK FOUR: Outcome data. 10 day, 1 month, 3 month, and 6 month neurological assessment, rehabilitation and life functioning capabilities are assessed.

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AANS 1998 Annual Meeting

April 25-30, 1998

Philadelphia, Pennsylvania

Your Guide to the Neurotrauma Highlights Throughout the AANS Annual Meeting

Sunday, April 26, 1998

Practical Clinic

019 Critical Care for the Neurosurgeon

Director: Jack Wilberger

Faculty: Alex Valadka, Issam Awad, Jeffrey Lobosky, James Lanz, Nelson Oyesiku, Raj Narayan, Daniel Scodary, Lawrence Dickinson, P. David Adelson

Monday, April 27, 1998

Breakfast Seminars

110 Peripheral Nerve Injury and Entrapment: Evaluation and Management

Moderator: David Kline

Panelists: James Campbell, Michel Kliot, Allan Friedman, Eric Zager, Allan Belzberg

115 Neurological Injuries and the Athlete

Moderator: Michael L.J. Apuzzo

Panelists: Charles Tator, Joseph Maroon, Robert Cantu, Arthur Day

Scientific Session III

2:45-5:15 PM

731 Improved Outcome and Reduced Cost in Cervical Spinal Cord Injury Using Emergent MRI Scanning and Surgical Decompression. Nathan R. Selden, Nayna Patel, Susan Grube, Stephen Papadopoulos. Discussant: Volker Sonntag

734 Current Patterns on Inflicted Head Injury in Children. Sherwin Rahimdashti, Debra Decker, Ashfaq Razaq, Alan Cohen. Discussant: Ann-Christine Duhaime

Scientific Session IV

2:45-5:15 PM

743 Mild Hypothermia: Optimal Depth and Duration, Effects on Infarct Size, Apoptosis, Inflammation, and Long Term Survival in Transient Focal Cerebral Ischemia. Carolina M. Maier, Kristine V. Abern, Ming L. Cheng, Gary K. Steinberg. Discussant: Bryce Weir

744 Cerebral Protection Via Suppression Of Basal Metabolism As The Primary Treatment For Neurological Injury Or As Prophylaxis With Elective Surgery. W. Michael vise. Discussant: Raj Narayan

745 Application of Transcranial Doppler Ultrasonography For The Diagnosis Of Brain Death. Moshe Hadani, Bella Bruk. Discussant: Donald Becker

Tuesday, April 28, 1998

Breakfast Seminars

204 Pediatric Critical Care

Moderator: Thomas Luerssen

Panelists: Michael Rosner, Randall Chesnut, Ann-Christine Duhaime, Harold ReKate

209 Management of Thoracolumbar Fractures

Moderator: Regis William Haid, Jr.

Panelists: Christopher Shaffrey, Gerald Rodts, Jr., David Cahill, Lee Ansell

214 Trauma Guidelines for the Practicing Neurosurgeon

Moderator:

Panelists: Jack Wilberger, Beverly Walters, Jam Ghajar, W. Ben Blackett

220 Mountaineering and High Altitude Medicine for the Neurological Surgeon

Moderator: Richard M. Lehman

Panelists: Richard Wohms, W. Ben Blackett, Rick Leone, John Krasney

Wednesday, April 29, 1998

Breakfast Seminar

314 Current Management of Cerebral Trauma

Moderator: Harold F. Young

Panelists: John Peter Gruen, Michael J. Rosner, Kevin Gibbons, Lawrence Marshall

Scientific Session VII

9:45-11:15 AM

764 The Fiberoptic Intraparenchymal Cerebral Pressure Monitor in 420 Patients. Scott A. Shapiro, Richard Chua, William Snyder, David Fritz. Discussant: Jack Wilberger

Thursday, April 30, 1998

Breakfast Seminar

410 Evaluation and Management of Penetrating Injuries to the CNS

Moderator: Barth A. Green

Panelists: Robert Heary, Michael Gerson, Brian Andrews



Liberty Bell. Photo courtesy of the Philadelphia Convention and Visitors Bureau. Photo taken by John G. Widmaier, Jr.



City Hall. Photo courtesy of the Philadelphia Convention and Visitors Bureau. Photo taken by Nick Kelsh.

Joint Section on Neurotrauma and Critical Care Scientific Session

Wednesday, April 29, 1998

2:45–5:30 PM

Special Lecture

2:45–3:15 PM

Antibiotic-Resistant Organisms: What Every Neurosurgeon Should Know

Robert Muder

Special Symposium

3:15–3:45 PM

Update on Neurotrauma: Current State of the Art - *Brian T. Andrews*

Spinal Cord Injury: Current State of the Art - *Michael Fehlings*

Head Injury: Current State of the Art - *Ross Bullock*

Scientific Session

3:45–5:30 PM

Moderator: *Brian T. Andrews*

843 Risk of Early Closed Reduction in Cervical Spine Trauma. *Gerald Grant, Sean M. Grady, Sohail Mirza, Jens Mirza, David Newell*

844 Surgical Treatment of Acute Spinal Cord Injury Study (STASCIS): Results of a Multicenter Retrospective Pilot Study in 585 Patients. *Charles Tator, Michael Fehlings*

845 Effect of Cerebrospinal Fluid (CSF) Drainage on Cerebral Perfusion and Oxygenation. *Mary Kerr, Don Marion, Patricia Orndoff, Barb Weber, Susan Sereika*

846 Rapid Correction Of Warfarin Coagulopathy In Intracranial Hemorrhage. *Nicholas M. Boulis, Miroslav P. Bobek, Alvin Schmaier, Julian T. Hoff*

847 Using Transgenic Technology to Explore the Function of Single Genes in the Pathophysiology of Traumatic Brain Injury. *Kathryn E. Saatman, Ramesh Raghupathi, Michio Nakeamura, Uwe Scherbel, Eugene S. Flamm*

848 S-100 And NSC Serum Measurements After Severe Head Injury. *Chris Woertgen, Ralf Dirk Rothoerl, Matthias Holzschuh, Christopher Metz, Alexander Brawanski*

849 Novel Mechanisms of Calcium Mediated Axonal Injury After Spinal Cord Trauma. *Michael Fehlings, Sandeep Agrawal*

Business Meeting

5:30–5:45 PM

Committee Reports

Pediatric Neurotrauma

P. David Adelson, MD

The Pediatric Neurotrauma Committee is continuing to put the finishing touches on the first draft of the Pediatric Severe Head Injury Guidelines. This effort continues to be spearheaded by Tom Luersson, MD. Within the next several months a draft will be available for the Guidelines Committee to review. We also are seeking approval of the Guidelines by the Society of Critical Care Medicine and the American Academy of Pediatrics. In a related project, Dr. Luersson is working with Hector James, MD, on the development of Mild Head Injury Guidelines.

Drs. Luersson, Ann-Christine Duhaime, and myself are working with Drs. Harvey Levin and Ellen McKenzie on a framework for a multicenter collaborative effort to study pediatric traumatic brain injury. This pilot program is being developed to create a foundation for future collaborative research projects.

The members of the Pediatric Neurotrauma Committee are also involved in putting together a practical course for the CNS Meeting in Seattle in the fall of 1998. This course, entitled "Pediatric CNS Injury and Critical Care," will include lecture presentations and a panel discussion. We hope that it will be of interest to the membership, and provide a basic understanding of the treatment of children with CNS injury.

The Pediatric Neurotrauma Committee is trying to identify other members of the Joint Section that may have a particular interest in children and pediatric CNS injury. We are hoping that through the identification of these new members direct involvement with either pediatric issues or research will be engendered.

Spinal Cord Injury Committee

Michael G. Fehlings, MD, PhD

The two major activities of the Spinal Cord Injury committee deal with: 1) Surgical Trial in Acute Spinal Cord Injury Study (STASCIS) and 2) Development of

guidelines for the management of acute spinal cord injury.

1) The STASCIS study group is led by Drs. Charles Tator, Michael Fehlings (University of Toronto) and Wayne Taylor (McMaster University). A grant for a Phase 2 Clinical Trial to examine the feasibility and efficacy of acute decompression (within 12 hours) of cervical spinal cord injury was submitted to the NIH in the fall of 1997. If the grant is approved and funded, the clinical trial will commence in July, 1998. To date the following centers have agreed to participate in the trial:

University of New Mexico—Ed Benzel, MD
Washington University—Carl Laurysen, MD
University of Kansas—Paul Arnold, MD
University of California (Davis)—
Frank Wagner, MD
Medical University of South Carolina—
Brian Cuddy, MD
University of Toronto—Michael Fehlings, MD,
Mahmoud Fazl, MD,
Charles Tator, MD
University of Tennessee—Kevin Foley, MD
Medical College of Wisconsin—
Dennis Maiman, MD,
James Hollowell, MD
University of Miami—Barth Green, MD
University of Iowa—Patrick Hitchon, MD
Thomas Jefferson University—
Bruce Northrop, MD
Barrow Neurological Institute—
Volker Sonntag, MD,
Curtis Dickman, MD
Allegheny General Hospital—
Jack Wilberger, MD

2) The Acute Spinal Cord Injury Guidelines group is a joint venture of the Section on Neurotrauma and Critical Care and the Section of Spine and Peripheral Nerves. We plan to develop an evidence-based set of guidelines similar to that created for severe head injury.

Sports Medicine Committee

Julian E. Bailes, MD

The Sports Medicine Committee of the Joint Section continues to be very active in several areas. "The Sports Related Concussion and Nervous System Injuries Confer-

ence" will be held again this year in Orlando, Florida, sponsored by Orlando Regional Healthcare System. This meeting, which is endorsed by the Joint Section, is the nation's only to focus on brain and spinal injuries and disorders related to athletes. This year the National Athletic Trainers Association, NFL Players Association, and University of Florida will also participate with their endorsement. A two and a half day conference is planned, covering the neurosurgical, neurophysiological, athletic trainers', and professional athletes' perspectives. Numerous presentations will be given concerning athletic injuries to the brain, vertebral column, spinal cord and peripheral nerves. There will be oral presentations and poster sessions for inclusion of submitted scientific abstracts.

Specific topics will include the neurophysiological evaluation of the scholar and professional athlete, ethical issues in the evaluation of athletes, the metabolic basis of concussion, neurosurgical treatment of major and minor athletic head injuries, sideline evaluation of sports concussion, biomedical and engineering aspects of helmet design, and spinal and peripheral nerve injuries in athletes, among others. There will be an update by physicians representing the NFL and NHL committees on mild head injuries. As in our previous meeting, a panel discussion for audience participation with professional athletes who have had their careers impacted by multiple concussions will be held.

Neurosurgeons participating include Arthur L. Day, MD, Charles H. Tator, MD, David G. Kline, MD, and Robert C. Cantu, MD. Richard A. Douglas, MD, Julian E. Bailes, MD, Mark R. Lovell, PhD, Barth A. Green, MD, and Michael Ray, MD will be the Course Directors. Anyone seeking additional information concerning this conference may contact the Orlando Regional Medical Center at 1-800-648-0450.

The Sports Medicine Committee also is completing a AANS publication concerning neurological injuries in the athlete. This monograph is scheduled for publica-

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tion in 1999 and will be edited by Julian E. Bailes, MD and Author L. Day, MD. The 20-chapter book will include chapters covering new forms of concussion classification, neurosurgical treatment of athletes, and controversial issues. It is expected to advance our understanding of neurological and neurosurgical athletic injuries and the role of the neurosurgeon in delivering their care.

I continue to encourage neurosurgeons to become more involved in the care of the injured athlete. We feel that progress has been made and that we are gaining both recognition and representation on a national level with our other sports medicine colleagues concerning the necessity and advantage of having active neurosurgical involvement.

Membership Committee

Alex B. Valadka, MD

The Neurotrauma Section recently completed a mailing to all resident members of the AANS and/or CNS, inviting them to become members of the Section and to enjoy waiver of dues for the duration of their training. The Executive Committee recognizes the importance of making young neurosurgeons aware of the many ways in which the Trauma Section works on behalf of all neurosurgeons, whether it be by disseminating new information about operative and critical care of neurosurgical patients, negotiating with legislatures and other regulatory bodies about on-call responsibilities and patient transfers, working to obtain more equitable reimbursement for trauma call and care of trauma patients, organizing and supporting scientific meetings for the dissemination of new knowledge, stressing the importance of injury prevention through the THINK FIRST program, or encouraging research through the Neurotrauma/Critical Care Young Investigator Award. The central role of neurosurgeons in treating sports injury will be emphasized at the Sports Medicine Conference in Orlando in February by offering nonmember attendees a waiver of their first year's dues if they apply for membership in the Section at the time of registration for the conference.

The Membership Committee also acts as the liaison of the Neurotrauma Section to **NEUROSURGERY://ON-CALL®**. Opportunities for participation in this area are plentiful, especially in the Public Pages Section of the neurosurgical Web site. Questions or suggestions are welcome at avaladka@bcm.tmc.edu (phone (713) 798-4696, fax (713) 798-3739).

American Brain Injury Consortium

Lawrence H. Pitts, MD

ABIC currently is assisting with two clinical neuroprotectant trials, one using SNX-111, an omega-kynotoxin presynaptic calcium channel blocker, being developed jointly by ParkeDavis and Neurex Corporation. Since the Phase 3 trial began in June of 1997, accrual is on schedule and proceeding smoothly. Several centers have not entered patients thus far because of IRB concerns or for other reasons, and ParkeDavis is willing to consider adding experienced centers to the trial. If you are interested, please contact Larry Pitts (415-353 7619, e-mail PITTS@neuro.ucsf.edu).

ABIC also is assisting Pfizer in their Phase 2 trial of CP101-606, an NMDA receptor antagonist, in patients with severe head injury. Some 25 centers are participating and patient entry is to begin this spring. ABIC is reviewing data from study centers to ensure that early clinical management of these patients is as consistent as possible from center to center, and follows ABIC guidelines.

ABIC is in ongoing discussions with several other pharmaceutical companies about trials which they hope to initiate in the near future.

The next meeting of ABIC investigators will be on Sunday, April 12 at the AANS Annual Meeting in Philadelphia. All interested neurosurgeons are invited to attend. Contact Larry Pitts or Tony Marmarou (804-828 8892 or abic@anacin.nsc.vcu.edu) for specific details.

Awards & Fellowships

Jack E. Wilberger, MD

The Joint Section on Neurotrauma and Critical Care awards an annual competitive fellowship stipend to a young investigator committed to the fields of neurotrauma and/or critical care.

This award is available to senior or chief residents in a neurosurgical residency training program in North America or Board-eligible neurosurgeons within the first three years of completing their residency training. The award provides support in the amount of \$40,000 for a one-year fellowship in research and/or clinical training in neurotrauma and/or critical care. The fellowship can be undertaken at North American or European centers with an established reputation in either clinical or basic research issues pertinent to neurotrauma and/or critical care.

The results of the individual's fellowship research must be presented as a lecture at the Joint Section Meeting at the Congress of Neurological Surgeons or the American Association of Neurological Surgeons Annual Meetings. It is also expected that research results would be submitted for publication in a national peer-reviewed journal.

If you would like to apply for the fellowship, please submit the following information to Jack E. Wilberger, Jr., MD, Allegheny General Hospital, East Wing Office Building, 420 East North Avenue, Suite 302, Pittsburgh, PA 15212-4746:

1. A current Curriculum Vitae
2. A letter from the applicant's neurosurgery residency program director confirming the date of his/her successful completion of neurosurgical residency or indicating his/her current status in the training program.
3. A letter from a critical care or neurosurgical mentor who will be responsible for the applicant's activities during the year of the fellowship.
4. A detailed description of the applicant's planned activities for the

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fellowship year. If the money is to be used for salary support, a detailed proposal with respect to the nature and type of research which will be undertaken is to be provided. If the money is to be used to support a research project, a detailed research proposal, along with a budget, must be submitted. In addition, if the latter is to be accomplished, we will require a letter from the sponsoring institution that ensures that the applicant has adequate space and resources to bring such a project to fruition. This letter should most logically come from either the Dean of the School of Medicine, or, depending on the hierarchy of the applicant's institution, the Director of Neuroscience/Neurosurgical/Critical Care research.

Head Injury Committee

M. Ross Bullock, MD, PhD

A highly successful consensus conference to formulate recommendations on the conduct of neurotrauma clinical trials was held in October, 1997, during the Congress of Neurological Surgeons Annual Meeting in New Orleans. The meeting was jointly sponsored by the Joint Section and the American Brain Injury Trials Consortium (ABITC). The publication arising from the meeting is currently being circulated for review by the author, and the final list of recommendations will be published in this newsletter in due course.

A second meeting to discuss this same topic—Construction of Neurotrauma Clinical Trials—was held in Charlottesville, December 1997, and was sponsored by the Brain Injury Foundation and the Charlottesville Neurotrauma Clinical Trials Center. At this meeting, there was much more input from representatives of pharmaceutical companies. A consensus document from this meeting also is forthcoming, and both will help to optimize the design of future Neurotrauma Clinical Trials.

Prevention

Michael J. Caron, MD

The two current activities of the Prevention Committee are the further growth and development of the Gun Safety Subcommittee and ongoing support of the THINK FIRST Foundation activities. Volunteer participation in these activities by all members of the Joint Section is encouraged and greatly appreciated.

The THINK FIRST Foundation was established by The American Association of Neurological Surgeons and the Congress of Neurological Surgeons in 1986 and became an independent not-for-profit foundation in 1990. The mission statement of the Foundation is simple: "To prevent brain and spinal cord injuries through the education of individuals, community leaders and the creators of public policy."

The four components of the Foundation activities are 1) a basic education program, 2) reinforcement activities, 3) general public education efforts, and 4) public policy initiatives. These activities are coordinated by the national office staff consisting of Fred Grubbe, Chief Executive Officer, Susan Morton, Program Development Coordinator, and a secretarial assistant. A volunteer Board of Directors consisting of neurosurgeons, community leaders, educators, and business executives further supports the national office staff. The board and other volunteers serve on committees responsible for Program Development (educational), Long Range Planning, and Resource Development and Finance. They guide national programmatic development and implementation through a network of over 200 local chapters in the United States and a growing number of chapters in Canada, Mexico, Chile, and Turkey.

THINK FIRST was initially developed by neurosurgeons to educate pre-teen and teen age youths about the irreversible nature of traumatic spinal cord and brain injuries, and to promote safe behavior as a means of prevention. The THINK FIRST FOR KIDS

program was released in 1996 and this program is designed for administration by Grade 1 through 3 elementary school personnel. Modules on: 1) brain and spinal cord anatomy and function, 2) bicycle safety, 3) playground and recreational safety, 4) vehicular safety, 5) sports safety, and 6) weapons safety, along with games, posters and cartoons for reinforcement comprise the KIDS program.

Distribution and implementation of the THINK FIRST FOR KIDS program to as many grade schools as possible is the current primary educational agenda of the THINK FIRST Foundation. To assist in this effort a web site has been developed (www.thinkfirst.org), and former NFL great Jim McMahon has agreed to act as the national spokesperson. Mr. McMahon and his children have participated in production of several video public service announcements to be distributed to cable and network television to increase national awareness of the award winning KIDS program. Mr. McMahon will be in attendance at the AANS and CNS meetings to highlight the videos and to participate in fund raising. A golf outing and dinner with Mr. McMahon and other celebrities are being planned for Philadelphia and Seattle.

All members of the Joint Section on Neurotrauma and Critical Care are encouraged to help make the brain and spinal cord injury prevention program developed by the AANS and CNS the national curriculum for injury prevention. Active participation in activities of a local chapter, recruiting your regional trauma center to use THINK FIRST as their community trauma prevention program, donating copies of the THINK FIRST FOR KIDS program to your local schools, and financial support of a local chapter or the THINK FIRST Foundation national office are all mechanisms for getting involved in the prevention of tragic injuries among our youth. The Foundation Board of Directors has instituted a new bylaw which allows physicians from specialties other than neurosurgery, such as trauma surgeons, orthopedic surgeons, and pediatric specialists, to sponsor local chapters

(Continued on page 9)

Committee Reports (continued from page 8)

and participate in implementing the KIDS program nationwide.

For information on the THINK FIRST Foundation national office, or the site of your nearest local chapter, visit the web site or call 800 THINK-56, Fax 847 692-2394. For information on the celebrity golf outing contact Michael J. Caron, MD, Chairman, Resource Development Committee, Voice Mail 630/527-6874.

Gun Safety Committee

Howard H. Kaufman, MD

The Gun Safety Committee was conceived from a concern about the numbers and severity of gunshot injuries and deaths in

this country. During the first phone conference, a suggestion was made that the committee adopt a mission statement that the ultimate goal be to decrease the incidence of brain and spinal cord gunshot wounds. An initial goal is to solicit funding from a broad spectrum of corporations, individuals, and charities who have an interest in gun safety. The funds will be used to give away trigger locks at a national gun awareness/ safety day, such as the "Stop the Violence" day sponsored by the National Coalition to Stop Gun Violence in March of each year. There are 65 million handguns in the U.S., and the group hopes to distribute several thousand trigger locks each year.

The committee currently consists of 14 people and is also consulting with George Pransky, a psychologist in La Conner, Washington who specializes in mediation. We will try to obtain funding from firearm and bullet manufacturers. We have a list of the top ten firearm manufacturers as well as the top ten handgun manufacturers. We are attempting to compile a list of bullet manufacturers but it has been difficult to obtain detailed information. We also have a list of gun manufacturers who are participating in a program to make safety locks available on all of their new handguns by the end of 1998. We have a list of many anti-gun organizations, corporations, individuals, and celebrities from whom we will also try to obtain funds.

Project Implements Severe Head Injury Guidelines (continued from page 3)

The CRP is required to enter patient data at certain times (and is reminded). The data is then sent over the Internet where it is received and stored in a central server in New York. The parameters for the database were developed in collaboration with Randy Chesnut MD, Neurosurgery, Oregon Health Sciences University and Roger Hartl MD, Neurosurgery, Allegheny General Hospital. The database software is interactive, allowing individual hospitals to query their own database and query a summary of the entire database. In addition, tutorials, references and notices will appear on the user's screen in response to patient parameters or timing. The Internet database has been collecting data on TBI patients at the seven hospitals since November, 1997.

A major component of this project is the analysis of the database in general as well as patient outcome data pre- and post implementation of the Guidelines. Faculty at the Sergievsky Center at Columbia University, a center of biostatistics and neuro-epidemiology, and Beverly Walters MD, Chairman of the AANS/CNS Guidelines Committee, are collaborating with Aitken to analyze the database. Testable hypotheses have been developed and are under analysis using the initial three month pilot data.

The next step is to instruct the hospital personnel on the *Guidelines*. Ambulance personnel, hospital administrators, ER, critical care, and neurosurgery doctors from the four countries will attend a two-day tutorial and workshop in Budapest during the last week of

May, 1998. Members of the AANS/CNS Neurotrauma and Critical Care Guidelines group, European neurosurgeons, and Critical Care and Emergency physicians, will give the *Guidelines* course and two hands-on workshops - ICP/CPP monitoring and Internet database update. Following the course, instructor teams will spend two days at each hospital to reinforce the course and identify any problems with implementation. The following year one hospital in each country will be given funding and educational material to be a center of instruction for other trauma hospitals within their respective countries. Because most Central European physicians speak and read English well, translation of the *Guidelines* and course material will not be necessary.

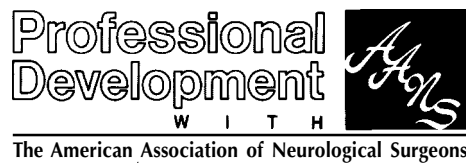
Hopefully this integrated model for *Guidelines* implementation and Internet database will prove effective and can be used in other countries. The World Health Organization's (WHO) Neurotrauma Section has endorsed the *Guidelines* and is assessing this work in Eastern Europe along with proposed field testing at WHO Collaborating Centers in Colombia and South Africa.

The success of this challenging phase in the *Guidelines* effort depends on the sustained efforts of neurosurgeons in the United States and abroad and the collaborative administrations of the Aitken Neuroscience Center, AANS and the AANS/CNS Joint Section on Neurotrauma and Critical Care.

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