

AANS/CNS Section on Neurotrauma & Critical Care

Editor: Alex B. Valadka, MD

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Chairman's Message



Ross Bullock, MD, PhD

The AANS/CNS Section on Neurotrauma and Critical Care has widened its scope of activities tremendously over the last two years. Under the leadership of Brian Andrews and Michael Fehlings, the membership has increased to an all-time high of over 1,200 members. Our financial standing is excellent, and the opportunities are now greater than ever for the Section to significantly impact patient care and to serve the needs of its members.

Over the next two years, the efforts of the Section leadership will focus on the following areas:

- Improve reimbursement for neurotrauma care delivery by neurosurgical providers.
- Complete the neurotrauma guidelines effort.
- Enlarge the numbers of fellowships, scholarship awards and grants to encourage young neurosurgeons to enter the trauma field.
- Increase awareness of neurotrauma among neurosurgeons and the community in general.
- Initiate data-collecting initiatives to determine the outcome of modern neurotrauma management nationwide.
- Create teaching aids in neurotrauma.
- Foster international collaboration to teach better neurotrauma care worldwide.
- Enhance collaboration between the Section and other neurotrauma groups such as the Neurotrauma Society, Brain Trauma Foundation, and Brain Injury Association.

Work on many of these projects is already well under way. Dr. Don Marion has begun working with the Washington Committee to improve reimbursement for trauma care. Dr. Brian Andrews

is working on a position statement concerning the hours on call that neurosurgeons should be available to provide trauma and other emergency care. Dr. Jam Ghajar and the Brain Trauma Foundation have begun to work closely with the Section to significantly advance the Guidelines initiative. A survey is being conducted to determine patterns and amounts of reimbursement paid to neurosurgeons by Level 1 and Level 2 trauma centers for providing trauma coverage. This is a first step towards standardizing this important aspect. Over the next few years, we should thus significantly improve the problems which are limiting neurosurgical involvement in trauma care.

In order to best serve the needs of its members, however, the Section needs input and feedback regarding its activities. These aims can only be achieved with coordinated input from neurosurgeons with an interest in trauma. We urge you to contact members of the Executive Committee, to let us know your views, and to help us in these endeavors. Thanks for all your help!

Below, you will find a listing of the committee chairs and office holders who have agreed to serve the Trauma section over the next two years.

AANS/CNS Section on Neurotrauma and Critical Care Officers and Committee Chairmen

Chairman	Ross Bullock, MD, PhD
Secretary/Treasurer	Alex B. Valadka, MD
Chairman-Elect	Donald Marion, MD
AANS Liaison	Brian T. Andrews, MD
ABIC Liaison	Raj K. Narayan, MD
CNS Liaison	Nelson M. Oyesiku, MD, PhD
Fellowships/Awards	Michael G. Fehlings, MD, PhD
Guidelines	Jam Ghajar, MD, PhD
Head Injury	Peter B. Letarte, MD
International Outreach	Nelson M. Oyesiku, MD, PhD
Internet/Media	David M. McKalip, MD
Membership	Jamie S. Ullman, MD

Neurotrauma Section in the Spotlight at the 2000 CNS Annual Meeting

Sunday, September 24

Morning Practical Course 8:00 AM–NOON

PC 34 Critical Care for Neurotrauma

Course Directors: *Alex B. Valadka, Donald W. Marion*
Faculty: *Peter B. Letarte, Christopher D. Sturm, Michael G. Fehlings, Geoffrey Manley*

Monday, September 25

Luncheon Seminars 12:30–2:00 PM

M01/M01R Trauma

International Luncheon and Program

Extreme Neurosurgery: Operating in Hostile Environments

Moderators: *Russell J. Andrews, Richard G. Perrin*
Faculty: *Jacques Brotchi, Ismail H. Aydin, Lee Finney*

MO15/M015R Current and Emerging Technologies for Monitoring Head-Injured Patients

Moderator: *M. Ross Bullock*
Faculty: *Alex B. Valadka, Jamie S. Ullman, David McKalip, Donald W. Marion, Howard Yonas*

M020/M020R Neurosurgical Management of Athletic Injuries

Moderator: *Michael Lee Levy*
Faculty: *Joseph Maroon, Stephen M. Papadopoulos, Dennis G. Vollmer, Julian E. Bailes, Jr.*

M026/M026R Neurotrauma Issues for the Neurosurgeon: Coverage, Procedures, and the Roles of Physician Extenders

Moderator: *John H. McVicker*
Faculty: *Thomas T. Lee, Nelson M. Oyesiku, Thomas E. Hoyt*

Subdural Hematoma Outcomes Project

The Subdural Hematoma Outcomes Project is enrolling patients. Those wishing to participate should contact "Outcome Sciences" for an ID at (888) 526-6700.

The website's address is <https://research.outcomesciences.com>.

Section on Neurotrauma and Critical Care I Special Course I/Sections

Spinal Trauma 2:00 PM–5:30 PM

Learning Objectives: Participants will be able to describe the use of radiographs for evaluation of cervical spine trauma. Participants will be able to discuss the rationale for management of spinal cord injury with steroids. Participants will be able to discuss new developments in the field of treatment of trauma.

Moderators: *Martin C. Holland, Perry Ball*
2:00–2:25 Radiographic and Clinical Clearance of the Cervical Spine in Trauma—*Donald E. Marion*
2:25–2:50 The Use of Steroids for Spinal Cord Injury—*Michael G. Fehlings*
2:50–3:30 Oral Posters
3:30–4:00 Refreshments with Exhibitors
4:00–5:30 Open Papers
4:00–4:09 Neurotrauma and Critical Care Resident Award Paper

Tuesday, September 26

Luncheon Seminar 12:30–2:00 PM

T43/T43R Contemporary Management of Head Injury

Moderator: *Donald W. Marion*
Faculty: *Daniel F. Kelly, Jam Ghajar, Jeffrey M. Lobosky, Thomas A. Kingman, Howard Eisenberg*

Wednesday, September 27

Luncheon Seminars 12:30–2:00 PM

W69/W69R Management of Penetrating CNS Injuries

Moderator: *Michael E. Carey*
Faculty: *Bishan Aarabi, Brian T. Andrews, James M. Ecklund, Martin C. Holland, Nelson M. Oyesiku*

Special Course III/Sections

Refractory Intracranial Hypertension:

Point-Counterpoint 2:00 PM–5:30 PM

Learning Objectives: Participants will be able to compare surgical to medical treatment for refractory intracranial hypertension. Participants will be able to discuss new developments in the field of treatment of trauma.

Moderators: *Martin C. Holland, Perry Ball*
2:00–2:25 Decompressive Surgery—*Christopher S. Ogilvy*
2:25–2:50 Barbiturate Therapy—*Alex B. Valadka*
2:50–3:30 Oral Posters
3:30–4:00 Refreshments with Exhibitors
4:00–5:30 Open Papers
Moderators: *Martin C. Holland, Perry Ball*

Pediatric Neurotrauma Committee

By P. David Adelson, MD

Members of the Pediatric Neurotrauma Committee remain quite active in multiple areas.

Critical Care Course

This course remains consistently successful. We continue to present the pediatric neural injury/critical care practical course at each of the major meetings. Attendance continues to remain at the 30-35 participant level, and the evaluations have generally been very positive. We will continue to update the course and modify it as recommended. The course for San Antonio is planned with Dr. John Ragheb assisting me in its organization and with a plan to provide further updates in material and content.

Pediatric Guidelines

An update of the original pediatric head injury guidelines is planned for late July or early August. The meeting and session is being organized by Randy Chestnut and the guidelines group out of Portland, Oregon, and is to take place in Chicago.

Pediatric Hypothermia Trial

This Phase II Trial investigates the safety and performance of hypothermia in children with severe traumatic brain injury, as well as a trial of new initial and outcome assessment instruments specifically for children. This trial commenced July 1, 1999 and is ongoing. Patient accrual will continue over the next two years, with outcome assessment continuing for six months. There are presently six primary centers, but at the present time, two other non-funded sites are likely to participate.

Child Abuse Working Group

The Pediatric Neurotrauma Committee has been quite active developing new initiatives that we will hopefully be able to develop further over the next few years.

- a) A luncheon seminar moderated by Dr. Michael Partington is planned for the CNS program in San Antonio 2000 using members of the committee. It will encompass the role of the neurosurgeon in the care of these patients, as well as medicolegal aspects. Hopefully we will add a breakfast seminar at future AANS Meetings based on the responses of the participants.
- b) Publication - We have submitted our ideas and a table of contents and authors on child abuse, its diagnosis, management, and medical/legal issues to Neurosurgery Clinics and await their thoughts.
- c) Prevention - We continue to hope as a group to identify potential prevention programs, and possibly work with major trauma centers and injury research and control centers to develop a child abuse prevention program.

One program being piloted in a member's city has shown some initial promise. It is a collaborative endeavor with a number of different professionals in the child violence field geared towards identifying individuals at risk during prenatal visits and at the time of birth. The program is taught to new mothers and other family members. This is obviously only in the beginning stages. As further details are worked out, I will continue to update you.

Outcomes

The subdural hematoma instrument has been listed in the outcomes instrument section of **NEUROSURGERY://ON-CALL®** (www.neurosurgery.org). Dr. David McKalip is heading up this project. The members of the Pediatric Neurotrauma and Outcomes Committee remain quite active. Obviously, any further thoughts or ideas are well appreciated.

P. David Adelson, MD, is Chairman, Pediatric Neurotrauma Committee, AANS/CNS Section on Neurotrauma and Critical Care.

FIENS Accepting Fellowship Applications

The Foundation for International Education in Neurological Surgery (FIENS) is accepting applications for an international visiting fellowship for a neurosurgeon to travel to a developing country for several weeks. The purpose of the fellowship is to promote education and exchange of ideas.

Inquiries may be directed to Dr. Nelson Oyesiku, the Chairman of the Trauma Section's International Outreach Committee (noyesik@emory.edu).

Chairman's Message (continued from front page)

Organ Donation	Jamie S. Ullman, MD
Pediatrics	P. David Adelson, MD
Prevention/Think First	Michael J. Caron, MD
Reimbursement and Coding	Donald W. Marion, MD
Resident Liaison	Geoffrey T. Manley, MD, PhD
Spinal Injury	Michael G. Fehlings, MD, PhD
Sports Medicine	Julian E. Bailes, Jr., MD
Washington Committee Liaison	Donald W. Marion, MD
Members-at-Large	Robert C. Cantu, MD and John H. McVicker, MD

M. Ross Bullock, MD, PhD, is Chairman, AANS/CNS Section on Neurotrauma and Critical Care

Inflicted Head Injuries in Infants – The Infant Shaken Impact Syndrome

By Mark S. Dias, MD

The term Whiplash Shaken Infant Syndrome was first proposed in 1974 by John Caffey (Caffey J: *Pediatrics* 54:396-403, 1974) to describe the association between long bone fractures, intracranial injuries, and retinal hemorrhages in infants (the majority under one year of age, with an average age of seven months) as a consequence of child abuse. Since then, the term Shaken Baby Syndrome has been most commonly employed to describe the combination of brain injuries (subdural, subarachnoid, and/or intraparenchymal hemorrhage and axonal shear injuries) and retinal hemorrhages from violently shaken, battered, and/or otherwise abused infants.

The true incidence of brain injuries due to abuse is difficult to accurately assess, as many lesser cases have undoubtedly gone unrecognized or were unreported. In 1991, nearly 1400 infant deaths from abuse were reported nationally, many from associated brain injuries (Couser S: *J Pediatr Health Care* 7:238-239, 1993). Brain injuries are a component of up to 44% of all cases of reported abuse; conversely, child abuse is the source of 95% of serious head injuries in infants less than one year of age and accounts for up to 80% of deaths from head trauma in infants less than two years of age (American Academy of Pediatrics Committee on Child Abuse and Neglect: *Pediatrics* 92:872-875, 1993). One-quarter to one-third of infants die as a result of their inflicted head injuries; of the remainder, one-half are left with significant neurological sequelae.

There has been considerable academic debate about the nature and forces necessary to produce these types of injuries. A number of studies have demonstrated that impact is involved, either in addition to, or instead of, shaking in many cases. For example, Duhaime's highly cited 1987 study of abused head injured infants demonstrated skull fractures in addition to brain and retinal injuries, leading the authors to conclude that many infants sustain an impact injury in addition to (or in some cases instead of) violent shaking, and to propose the term Shaken Impact Syndrome (Duhaime AC, Gennarelli TA, Thibault LE, et al: *J Neurosurg* 66:409-415, 1987).

Another study documented upper cervical spinal cord injuries in a number of victims from extreme whiplash motions of the fragile infant neck during the abuse (Hadley MN, Sonntag VKH, Rekate HL, Murphy A: *Neurosurgery* 24:536-540, 1989), leading to the use of the term Shaken Whiplash Syndrome.

Because in many cases it is difficult to accurately discern the relative importance of shaking versus impact as causes of these injuries, some have proposed that the term Inflicted Head Injury (IHI) be used to describe abusive head injuries in infants. Whatever the mechanism(s) involved, the injuries require extraordinary force. The American Academy of Pediatrics has stated that the amount of force required to produce these injuries is so great that nobody would consider these acts to be within the realm of normal human behavior. In particular, playful activities such as bouncing an infant on one's knee or tossing an infant in the air, although perhaps not the safest things to do, are not the cause of infant abusive head injuries. Nor are short falls from, for example, a couch or bed, the cause of these

injuries; numerous studies have documented the extraordinary rarity of severe head injuries following minor falls. For example, retinal hemorrhages are visible in 80% of infant abusive head trauma, but occur in only 3% of accidental head injuries, almost always following high speed auto accidents or falls from upper story windows.

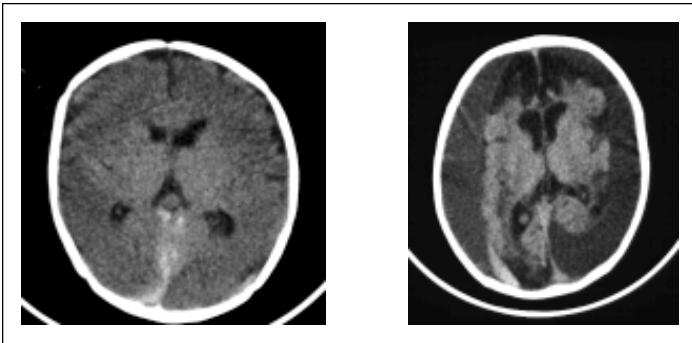
Inflicted head injury is a male problem; male infants are more commonly victims (by a ratio of 60% to 40%), and males are more frequently perpetrators by a ratio of 2.2 to 1. Fathers and stepfathers (accounting for 37% of cases) and boyfriends (accounting for 21% of cases) are most frequently involved. Female babysitters account for 17% of cases, and mothers account for 13% (Starling SP, Holden JR, Jenny C: *Pediatrics* 95:259-262, 1995). The unexpectedly high proportion of babysitter related injuries is particularly alarming in that over 60% of mothers of preschoolers currently work outside of the home.

Crosses all socioeconomic and educational lines

Infant abuse crosses all socioeconomic and educational lines, although risk factors such as young age, poverty, unemployment, behavioral difficulties in the parent, unusual social stressors in the family, and the child's behavior may all contribute to child abuse (Starling SP, Holden JR, Jenny C: *Pediatrics* 95:259-262, 1995; Krugman R, Lenherr M, Betz L, et al: *Child Abuse Negl* 10:415-418, 1986). Shaking may be a response to the tension and frustration engendered by frequent or incessant infant crying or irritability, particularly among parents who have unrealistic expectations of child behavior or those who expect their own personal needs to be met by the child (American Academy of Pediatrics Committee on Child Abuse and Neglect: *Pediatrics* 92:872-875, 1993). Shaking might be viewed as a "safer" alternative to striking or battering an infant, although the unfortunate truth is that inflicted head injury remains the most severe and lethal form of child abuse.

The pathological sequelae of inflicted head trauma include focal or diffuse axonal shearing injuries, acute and/or chronic subdural and/or subarachnoid hemorrhages, and retinal hemorrhages. Additionally, some victims have upper cervical spinal injuries including spinal cord axonal disruption, lacerations, or even frank rupture; paraspinal ligamentous tears; and spinal subdural hemorrhage. Superimposed secondary brain injuries can include ischemic/anoxic damage due to apnea, prolonged and repeated seizures, destructive biochemical cascades, and/or intracranial hypertension. Initial CT scans often demonstrate widespread cerebral hypodensities (the so-called "big black brain"), and delayed CT scans in survivors usually demonstrate significant generalized atrophy.

Clinically, the surviving child is often left with devastating neurological deficits, seizures, spasticity, mental retardation, learning disabilities, and blindness (either cortical or due to the retinal hemorrhages). The economic burden to the family and to society is astounding when one considers the global costs of caring for those children who survive. Showers estimated several years ago that the



The initial CT taken immediately after the injury (left) shows a small amount of subdural blood along the posterior falx and left parietal convexity, but otherwise looks relatively unremarkable. A CT scan taken several weeks later (right) shows severe atrophy, with huge chronic subdural fluid collections.

initial inpatient hospitalization costs approach \$70,000 per child, and the average cost for only the following five years exceeds \$300,000 per child (Showers J, published by the Special Projects Office, Pueblo, CO). Current estimates suggest that five-year medical costs for a single case alone can exceed \$1 million.

CT scans of an infant with inflicted head injuries

Neurosurgeons who treat head injured children must maintain a constant vigil to properly identify inflicted head injury and to understand the injury patterns produced by these injuries. Changing or inconsistent stories provided by parents or family members, as well as injuries that are inconsistent with the story provided or beyond the developmental capabilities of the infant, are clues to the diagnosis. Although skull fractures (sometimes with epidural hematoma) may occur after accidental head trauma — including falls from low heights — extensive skull fractures, subdural and/or subarachnoid hemorrhage, parenchymal injuries such as global hypodensities and/or axonal shear injuries, and retinal hemorrhages

are particularly suspicious. The physical examination should be focused on identifying other injuries such as suspicious bruising on the buttocks, torso, head and neck, or other padded areas. A skeletal survey to identify occult fractures, and a formal retinal evaluation from an ophthalmologist skilled in the infant eye examination, should be obtained. Questionable cases should always be viewed with suspicion, and an evaluation from a pediatrician skilled in child abuse evaluation should be sought. State law mandates that physicians in every state report cases of suspected child abuse (even if not confirmed) to state agencies such as Child Protective Services.

Services for further evaluation

Neurosurgeons who evaluate and treat head injured children could be among the most effective group of clinicians in identifying cases of inflicted head injury. Unfortunately, as a group, both our knowledge of, and our involvement with, this issue have often been found lacking. Our uncertainty about the literature, and our reluctance to face a sometimes confrontational legal system, should not deter us from properly discharging our duties as mandated reporters of child abuse. We must all be vigilant and involved, as the consequences of missing a case of inflicted head injury could literally prove to be fatal.

Bibliography

1. Nonaccidental head injury in infants - the "shaken-baby syndrome." *N Engl J Med* 338:1822-1829, 1998.
2. Shaken Baby Syndrome: inflicted cerebral trauma. American Academy of Pediatrics Committee on Child Abuse and Neglect. *Pediatrics* 92:872-875, 1993.
3. Greenwald MJ: The Shaken Baby Syndrome. *Seminars Ophthalmol* 5:202-215, 1990.

Mark S. Dias, MD, is Associate Professor and Chief, Division of Pediatric Neurosurgery, Children's Hospital of Buffalo, State University of New York at Buffalo.

Guideline Initiatives in Traumatic Brain Injury

GUIDELINE TITLE/STATUS	CONTACT PERSON CHIEF AUTHOR	PUBLICATION STATUS
Guidelines for Severe Head Injury Management 1st Edition, 1996	Bullock, et. al 10 authors	Published-AANS Publications and <i>Journal of Neurotrauma</i> , 13:639-731, 1996
Severe Head Injury Guidelines 2nd Edition, and Outcome Guidelines	Dr. Jam Ghajar	Brain Trauma Foundation and AANS, in press for <i>Journal of Neurotrauma</i> , 2000
Mild Head Injury Published		American Academy of Neurology, 1997
Pediatric Head Injury Never completed		Will be undertaken by another author in the Joint Section
Management of Penetrating Cranial Injuries	Dr. Robert Florin Dr. Beverly Walters	AANS and <i>Journal of Trauma</i> , in press, 2000
Surgical Management of Head Injury	Dr. David Newell & Dr. Jam Ghajar	Brain Trauma Foundation, in planning stage

Update From the Brain Trauma Foundation

By Jamshid Ghajar, MD, PhD

80,000 EMT's to Receive Training in Traumatic Brain Injury Treatment from the Brain Trauma Foundation's Guidelines for the Prehospital Management of Traumatic Brain Injury

In 1998, supported by a grant from the U.S. Department of Transportation National Highway Traffic Safety Administration, the Brain Trauma Foundation initiated a program to develop and teach the *Guidelines for the Prehospital Management of Traumatic Brain Injury*. The program is called **Assessment, Treatment and Transport of TBI Patients, A Program for Prehospital Personnel**. Its primary purpose is to significantly decrease the mortality and morbidity due to severe traumatic brain injury in the prehospital setting.

The goals of the program are:

- To educate EMS providers in the assessment and management skills of TBI in the prehospital setting so that these practitioners are equipped to provide patients with optimal care. The program includes oxygenation, blood pressure, ventilation and inter-rater reliability in Glasgow Coma Scale scoring.
- To encourage the incorporation of the *Guidelines for Prehospital Management of TBI* into the national standards curriculum.
- To demonstrate in the field that optimal management of TBI in the prehospital setting makes a difference in patient outcomes.

Three Phases of Implementation

1. With the assistance of a national group of emergency medical service experts, BTF developed the first-ever scientific evidence-based document for EMS, *Guidelines for the Prehospital Management of Traumatic Brain Injury*, during the first phase of the program.
2. BTF developed supplementary training and educational materials including an algorithm and chart for use in ambulances, two training videos, several CD-ROMS, instructor and provider lesson plans, slide sets, and other aids.

These materials were tested at five pilot sites in the Fall of 1999: Metropolitan Birmingham, Alabama; Anchorage and surrounding regions, Alaska; Navajo Nation, Arizona and New Mexico; the District of Columbia; and the greater Galveston area, Texas. Feedback from the prehospital personnel who participated in the pilot training sessions was used to revise the educational products.

3. A national roll-out of the program began in 2000 with nine states (Alabama, Delaware, Florida, Georgia, Maryland, Mississippi, Tennessee, Virginia, and West Virginia) plus the District of Columbia. Implementation in each state varies to accommodate local system needs and differences, but all are initiated with state Public Health officials and regional Medical Directors.

Future sites for the program are planned for 19 additional states.

For more information about this program, or for information about purchasing the *Prehospital Guidelines*, please contact Pamela Walker, Project Director, Brain Trauma Foundation, 212-772-0608. The *Prehospital* and (in-hospital) *Guidelines* can be reviewed at the BTF website, www.braintrauma.org.

Updates on Other Major BTF Initiatives

New York State Demonstration Project

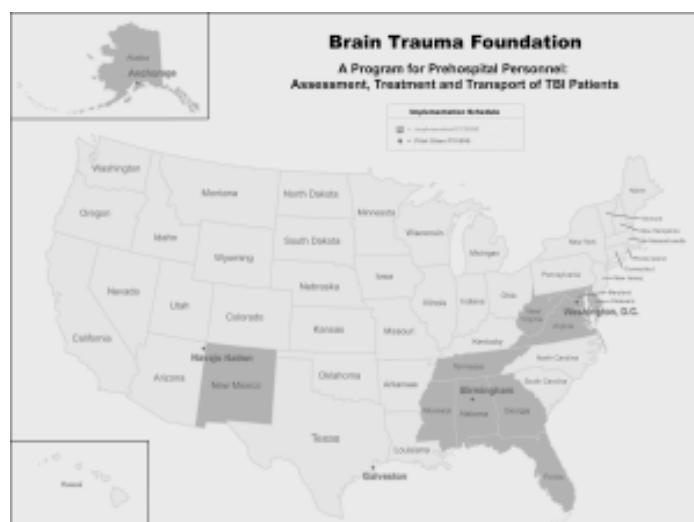
The Brain Trauma Foundation, supported by a grant from the New York State Department of Health, completed its first phase of a demonstration project for acute care of Traumatic Brain Injury (TBI) that BTF will use nationwide. The demonstration project enables us to "field test" training seminar materials, a Web-based patient database, and outcome assessment tools, prior to a state-by-state roll-out.

Five trauma centers that handle a high volume of severe head injuries are participating. The key elements of this program include training for all appropriate personnel in the latest scientific-evidence based treatment protocols for TBI, implementation of a quality assurance treatment and outcome database (TBI-trac™), and follow-up visits to track patient outcome for one year after injury. The Brain Injury Association of New York State is conducting the patient outcome portion of the project.

U.S. Trauma Center Survey Project Complete

In early 2000, BTF completed the process of identifying and contacting every trauma center in the nation where severe head injuries are treated. The survey identified the current level of TBI practice that is in accordance with evidence-based recommendations in the *Guidelines*. It has been ascertained by the survey that of

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Resident/Fellowship Awards

By Michael G. Fehlings, MD, PhD, FRCSC

The 1999-2000 Codman Neurotrauma Fellowship Award Winner, Dr. Amir Malik from Temple University, presented his paper entitled "The Effects of Fluosterone Following Traumatic Brain Injury in Rats" at the AANS meeting in San Francisco in April.

In addition, the two Synthes Resident Research Awards were presented. The Synthes Award for Resident Research on Spinal Cord and Spinal Column Injury was presented to Dr. Todd J. Stewart of Washington University for his paper entitled "Embryonic Stem Cells Myelinate and Produce Extracellular Matrix in vitro and When Transplanted into the Injured Spinal Cord," and the Synthes Award for Resident Research on Brain and Craniofacial Injury was presented to Dr. Geoffrey Manley of the University of California, San Francisco for his work entitled "Aquaporin-4 Deletion in Mice Reduces Brain Edema Following Acute Water Intoxication."

The Executive Committee of the AANS/CNS Section on Neurotrauma and Critical Care, together with the Synthes and Codman companies, is pleased to invite applications for the following 2000-2001 annual awards:

- For residents submitting outstanding research in spinal and cranial neurotrauma: the Synthes Award for Resident Research on Spinal Cord and Spinal Column Injury and the Synthes Award for Resident Research on Brain and Craniofacial Injury. Two prizes (one cranial and one spinal) will be awarded at both the annual AANS and CNS meetings.
- To support young neurosurgeons in obtaining additional clinical and research training in the field of neurotrauma: the Codman Fellowship in Neurotrauma.

The Resident and Fellowship Award winners will be chosen through a formal peer-reviewed process based on their curriculum



Paul Gordon, Synthes Spine (left), congratulates award winners Todd J. Stewart (second left) and Geoffrey Manley (center). Also offering congratulations are Steve Murray (second from right), Synthes Maxillofacial, and Michael G. Fehlings (far right), Chairman of the Fellowship and Awards Committee of the Trauma Section.

vitae, the training environment and the quality of the research and/or training proposal.

Please contact Dr. Michael G. Fehlings, Chair, Awards & Fellowship Committee of the AANS/CNS Section on Neurotrauma and Critical Care (email: michael.fehlings@uhn.on.ca) for further information regarding these awards.

Michael G. Fehlings, MD, PhD, FRCSC, is Chair, Fellowships/Awards Committee, AANS/CNS Section on Neurotrauma and Critical Care.

Update (continued from previous page)

the 924 trauma centers identified, approximately half of the centers stabilize the patients and transfer them to another trauma center. The remaining centers care for severe traumatic brain-injured patients; however, the level of compliance with the recommendations in the *Guidelines* remains low, which emphasizes the need for a national education program.

International Brain Trauma Foundation

Brain Trauma Foundation launched an affiliate organization in Vienna, Austria, that will concentrate on improving TBI outcomes in Europe and other countries around the world. The International Brain Trauma Foundation (IBTF) is an independent, non-profit, non-governmental organization, which will exclusively use BTF's educational materials and curricula.

Jamshid Ghajar, MD, PhD, is Chairman, Guidelines Committee, AANS/CNS Section on Neurotrauma and Critical Care.

Minutes from the Executive Council Meeting

By Michael G. Fehlings, MD, PhD, FRCSC

The following are excerpts of the minutes from the Executive Council Meeting of AANS/CNS Section on Neurotrauma and Critical Care held on April 11, 2000, in San Francisco.

Chair: Brian Andrews; Secretary Treasurer: Michael Fehlings. In attendance: David McKalip, Perry Ball, Nelson Oyesiku, June Wasser (Representative to JSNTCC from AANS), Alex Valadka, Paul Elliott (Liaison, Young Neurosurgeons' Committee), John Popp (Chairman, Washington Committee), Katie Orrico, (Washington Office Director), David Adelson, Sam Hassenbusch (Coding and Reimbursement Committee), Jam Ghajar (Brain Trauma Foundation), Peter Quinn (Brain Trauma Foundation), Donald Marion, Martin Holland, Geoff Manley, Julian Bailes and Michael Caron (Think First).

Secretary Treasurer's Report

Overall, the JSNTCC is in good financial shape, particularly in light of a significant increase in educational and fellowship initiatives, including the Codman Neurotrauma Fellowship and the four annual Synthes Resident Research Awards. Moreover, the 2000 AANS Visiting Lecturer, Dr. David Graham, was supported by a grant from Medtronic/Sofamor-Danek. It is anticipated that these commercial contributions will continue in the future and should allow the JSNTCC to promote educational research and prevention efforts.

The JSNTCC *News* was discussed in the context of the AANS *Bulletin* and the CNS *Neurosurgery News*. It was unanimously felt that the JSNTCC should continue producing its own newsletter as this is an excellent forum which provides clear identification of the goals and initiatives of the JSNTCC. However, it is also felt that the JSNTCC should contribute actively to the AANS *Bulletin* and to *Neurosurgery News* on a regular basis. To facilitate this, Martin Holland and Paul Elliott were nominated to be the Editors for the JSNTCC's section of *Neurosurgery News*. The Secretary Treasurer will continue to solicit regular contributions to the AANS *Bulletin*, which is felt to be an important vehicle to focus on socioeconomic factors related to neurotrauma care.

Washington Committee Report

Dr. John Popp emphasized that the Washington Committee is focusing on a number of issues including those related to the FDA and coding/reimbursement. Dr. Ross Bullock is currently the liaison of the JSNTCC to the Washington Committee, and this is felt to be an important linkage. Ms. Orrico also indicated that the AANS is currently setting up a task force to review on-call coverage in emergency rooms. Input from neurosurgical practitioners is being solicited by the Washington Committee and will play an important role in this process. Dr. Sam Hassenbusch, representing the Coding and Reimbursement Committee, emphasized that on-call stipends for neurotrauma care remain a critical issue. In order to represent the viewpoints of the JSNTCC in this process, Dr. Don Marion was nominated to be the Neurotrauma Representative to the Coding and Reimbursement Committee

A motion was made and carried unanimously to commit a \$10,000 level of support for the next fiscal year to the Washington Committee. The monetary support to the Washington Committee by the JSNTCC will be revisited on an annual basis.

Brain Trauma Foundation

Peter Quinn briefly updated the Neurotrauma Executive regarding current and future initiatives of the Brain Trauma Foundation. The AANS Board has recently approved a set of revised Traumatic Brain Injury Guidelines which have been sponsored by the Brain Trauma Foundation. The Guidelines will be published by the Brain Trauma Foundation in hard cover format and will be sold at cost to the AANS who, in turn, will resell this text to the neurosurgical community. In addition, the revised Traumatic Brain Injury Guidelines will be available on the Web in a read-only format. The Aitken Brain Institute has also developed a set of pre-hospital guidelines directed at emergency medical services to facilitate the care of patients with traumatic brain injury and plan to institute these pre-hospital guidelines in nine states. Peter Quinn also briefly reviewed the efforts of the Brain Trauma Foundation internationally, particularly in Central Europe. These efforts have been focused on defining a patient-based database and in the development of educational programs. In addition Brain Trauma Foundation has developed a database (TDI Track) to track outcome data (up to one year) of patients with traumatic brain injury. Finally, the Brain Trauma foundation is interested in nationalizing the previously described initiatives.

It was felt that a close liaison should exist between the Neurotrauma Executive Council and the Brain Trauma Foundation. The JSNTCC Executive Council expressed strong endorsement of the efforts by the Brain Trauma Foundation and wishes to be considered the vehicle by which the Brain Trauma Foundation can access organized neurosurgery. In addition, it was felt that the Brain Trauma Foundation should have a regular opportunity to contribute to the JSNTCC *News*.

Awards and Fellowships Committee

The 1999-2000 Codman Neurotrauma Fellowship Award Winner, Dr. Amir Malik from Temple University, presented his paper entitled "The effects of Fluasterone following traumatic brain injury in rats." In addition, the two Synthes Resident Awards were presented. (See story on page 8.) The two Synthes Award winners each received a beautiful plaque, coordinated by Dr. Martin Holland. It was felt that in future all award winners, including the Codman Fellowship Award recipient, should receive such a plaque.

The AANS Research and Education Foundation has offered to cosponsor a Neurotrauma Fellowship Award. A motion was proposed and carried to provide the AANS Research and Education Foundation with a one-time commitment of \$22,500 to cosponsor such a Research Fellowship Award. Some discussion ensued as to whether this Fellowship Award should be made specific to spinal cord injury.

Ultimately, it was felt that both the Codman Neurotrauma Fellowship Award and the AANS Research Foundation Award should be given to the best candidate/research projects. Dr. Michael Fehlings was appointed as the 2000-2001 Awards and Fellowships Committee Chairman, and he will contact AANS Research and Education Foundation with regard to the combined AANS Neurotrauma Section Fellowship Award.

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Discussion ensued in terms of ideas to further promote a trauma focus within the Neurotrauma Section. In addition, plans were discussed to develop an international section and to better promote the Neurotrauma Section to young neurosurgeons.

Head Injury Committee

The results of the survey of the Membership of the American Association for the Surgery of Trauma (AAST) were presented at a plenary session at the 2000 AANS meeting. This manuscript is currently under review at *Neurosurgery*. Dr. David McKalip's Survey on Sedation and Head Injury is currently ongoing and the data are presently being collated. It was felt that this issue is sufficiently important as to warrant inclusion in the next newsletter. The Subdural Hematoma Outcomes Project is currently on-line. The American Brain Injury Consortium has requested financial support if the Neurotrauma Section wishes to access its data. Some discussion regarding this matter ensued. Consensus was reached that the Neurotrauma Section Executive Council would not support putting additional funds into the Subdural Hematoma Outcomes initiative. However, it was felt that an announcement should be put into the upcoming newsletter asking members to submit outcomes data for the Subdural Hematoma Project.

The Neurotrauma Section's support for the new JSNTCC International Visiting Professorship was discussed. To date no individual has volunteered to take part in this FIENS initiative. It was felt that this project should be advertised in the upcoming Neurotrauma *News*. Nelson Oyesiku will be the JSNTCC representative to attend the Annual Meeting of FIENS in Chicago in March 2001.

Sports Medicine Committee

Julian Bailes and Art Day are editing a book on Sports Medicine in Neurosurgery, which will be published by the AANS later on in 2000.

The March 2000 Conference on Neurological Sports Injuries did not take place. A request was made to defer the \$5,000 contribution of the JSNTCC until the year 2001 when another such conference is expected to take place. The Sports Medicine Committee has a paper accepted in the American Academy of Neurology Meeting which is reporting that 60% of retired players with more than two to three significant concussions are self-reporting problems associated with memory dysfunction and dizziness.

The Sports Medicine Committee has raised \$10,000 in funding to study the chronic effects of concussions in athletes at the University of North Carolina, Chapel Hill. Some discussion ensued with regard to the need for development of guidelines for sideline assessment for concussions. Dr. Bailes has indicated that he has set up a Concussion Study Subcommittee consisting of himself as Chair, along with Drs. Cantu, Marion, Holland, Day, Fuerer, McVicker, Appuzo and Andrews.

Spinal Cord Injury Committee

Dr. Fehlings (for Dr. Tator) summarized the Spinal Cord Injury Guidelines development process with which he is associated and circulated a draft document regarding Evidence-based Guidelines for Surgical Decompression in Spinal Cord Injury. In addition, a draft document has been produced regarding Guidelines' development for the Use of Methylprednisolone in Spinal Cord Injury. A document will be submitted to the Neurotrauma Executive Council by the time of the San Antonio meeting in the Fall 2000. The status of the Cervical Spine Clearance Guidelines was briefly discussed. Currently these guidelines are in revision. Dr. Marion is involved in this for Eastern Association for the Surgery of Trauma. An update of this will be provided by Dr. Marion at the San Antonio meeting.

Critical Care Committee

The Committee is involved in the development of a core curriculum in critical care textbook that is in concert with a new book entitled *Intensive Care in Neurosurgery*, edited by Dr. Brian Andrews for the AANS Publications Committee. In addition, the Committee continues to support the biannual critical care courses that are organized by the Joint Section for both adult and pediatric critical care.

Pediatrics Committee

The Pediatric Neurotrauma Critical Care Course remains consistently successful. Attendance continues to range in the 30-35 participant level. Pediatric Neurotrauma Guidelines are currently stalled. It is likely that another meeting of the topic editors will be necessary to adequately bring each of the topics up to date. The Pediatric Hypothermia Trial initiated in July 1999 is still ongoing. Planned accrual will take place over the next two years. The Pediatric Neurotrauma Committee has been very active in the area of child abuse. A breakfast seminar regarding this issue has been planned and will be added to the CNS Program in San Antonio. In addition a position paper and publication on this issue are planned in the future. Furthermore, efforts at developing potential prevention programs are underway.

JCSNS

Emergency Room coverage remains a major issue with regard to neurotrauma. A proposal was made to form an ad hoc committee regarding Emergency Room coverage issues with John McVicker as liaison.

Prevention Committee

To increase liaison with the AANS and CNS offices, representatives from each of these organizations to the Think First Board were appointed. Think First Office remains associated with the AANS National Office, and a new landlord-tenant relationship has been established. Think First has added 33 new state chapters. Currently there are 205 chapters in place. Think First has apparently changed its name to the "National Injury Prevention Foundation." The JSNTCC has committed a total of \$10,000 for the year 2000-2001 to Think First, \$5,000 to be committed at the CNS meeting and \$5,000 at the AANS meeting.

Report of the CSNS Liaison to the Neurotrauma and Critical Care Section

By John H. McVicker, MD, FACS

The relationship between the AANS/CNS Section on Neurotrauma and Critical Care and the Council of State Neurosurgical Societies is growing to be an important one. Socioeconomic issues head the list of concerns in many of our practices, and the Section and the Council are working together to address these issues.

The spring session of the CSNS addressed several issues of concern to Section members. The assembly adopted a resolution requesting the AANS and CNS leadership to renew their commitment to the Think First Foundation by identifying funding sources, encouraging financial support in the neurosurgical community, and increasing exposure at national meetings. A resolution seeking model state legislation to direct integration of trauma prevention and safe behavior into core school curricula was referred to the Neurotrauma Committee for implementation. Several new resolutions supporting recreational sports helmet use and support for Trauma System Development Act funding are pending.

On the Washington front, the Senate Labor-HHS-Education Appropriations Subcommittee has approved \$3 million for Fiscal Year 2001 for the Trauma Care Systems Planning and Development Act. This legislation authorizes the Secretary of Health and Human Services to award grants to states to assist them in planning, implementing, and monitoring statewide trauma care systems. Funding for the program was secured in large part through

the efforts of a coalition of trauma-related specialties, including neurosurgery, which persuaded 53 Senators to sign a letter of support for resurrecting the trauma program.

Health Resources and Services Administration's FY 2000 budget combines Emergency Medical Services for Children, Traumatic Brain Injury, Trauma Care Emergency Medical Services, and Poison Control Centers into a single administrative entity. The budget request includes a \$2.5 million increase that will provide \$1 million to Trauma Care Emergency Medical Services. Final budgetary approval for these proposals is scheduled for later in the year.

The **NEUROSURGERY://ON-CALL**[®] (www.neurosurgery.org) Neurotrauma Survey has been completed, and results are being tabulated. Nearly 20% of respondents are being reimbursed in some fashion for trauma coverage. Novel approaches to improving the economic viability of trauma call for neurosurgeons is a key issue for the CSNS neurotrauma committee and is becoming an important component of ensuring emergency access to neurosurgical care. If these are issues of concern to you, please consider observing the fall CSNS session in San Antonio prior to the CNS meeting for more information, or plan on attending the CNS luncheon seminar on socioeconomic issues in neurotrauma.

John H. McVicker, MD, FACS, is a Member-at-Large, AANS/CNS Section on Neurotrauma and Critical Care.

Report of the Washington Committee

By Donald W. Marion, MD

During the last year, the Washington Committee has invited a representative from each of the AANS/CNS Sections to attend its semiannual meetings. I was asked by Dr. Ross Bullock to represent the AANS/CNS Section on Neurotrauma and Critical Care for the May 19th meeting. The Committee is chaired by John Popp. I was impressed, however, that several of the senior members of the AANS Executive Committee also were members of the Washington Committee, including John Kusske, Dick Roski, Stewart Dunsker (current AANS President), and Stan Pelofsky (President-elect of the AANS).

Specific action items of the May 19th meeting included approval of a letter supporting Senator Arlen Specter's stem cell legislation, recommendations for support of IRB reform to facilitate the performance of clinical trials for patients rendered unconscious as a result of a neurosurgical problem, support of the nomination of Jerry Fischbach for the AMA Nathan Davis Award, and support for a new initiative to deal with problems related to neurotrauma care.

I was asked by Dr. Popp to develop an Action Plan for improving acute neurotrauma care in the United States. After discussing my

ideas with Dr. Bullock prior to the Washington Committee Meeting, I have subsequently prepared a draft Action Plan that is currently being reviewed by Dr. Bullock. I will revise the document according to his recommendations and present a second draft to the Executive Committee of the AANS/CNS Section on Neurotrauma and Critical Care at the meeting in San Antonio this fall.

The plan focuses on two specific issues:

- improving reimbursement for trauma care
- revising EMTALA Laws so that they allow neurosurgeons to provide high-quality neurotrauma care in settings where a single neurosurgeon is expected to cover numerous hospitals.

I anticipate that this effort will take several years to push through the system, but I believe it can be done.

Donald W. Marion, MD, is President-elect and Washington Committee Liaison, AANS/CNS Section on Neurotrauma and Critical Care.

Application for Membership



AANS/CNS Section on Neurotrauma and Critical Care

I. Biographical

- (A) Name: _____
- (B) Home Address: _____
- (C) Office Address: _____

- Phone: _____ Fax: _____
- (D) E-Mail: _____

II. Category of Membership Requested: (Must be a member of the AANS or CNS.)

- Active Associate
- International Resident

III. Membership, Certification and Practice:

- (A) Are you certified by the American Board of Neurological Surgery? Yes No
- (B) Are you a member of
1. The American Medical Association? Yes No
2. A Local or Regional Medical Society? Yes No
3. A State or Provincial Medical Society? Yes No
Name: _____
4. The American Association of Neurological Surgeons? Yes No
5. The Congress of Neurological Surgeons? Yes No

Signature of Applicant

Date

*Membership dues are waived for applicants currently enrolled in a neurosurgical residency program.

**Please return the completed application with your membership fee of \$50 to:
AANS/CNS Section on Neurotrauma and Critical Care
Dept. 77-7597
Chicago, Illinois 60678-7597**

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Emergency Department Coverage: Issues, Obligations and Opportunities

By Brian T. Andrews, MD, FACS

California, 42% of all EDs pay a stipend to neurosurgeons for ED coverage, but such payments are geographically uneven, and the amounts variable.

Recently the JCSNS initiated an on-line national survey about these issues, which I hoped you filled out for your state. As your representative to the Board of Directors of the AANS, I will continue to keep the issue of ED coverage a top priority. I would like to hear from you about your concerns, problems, or any useful solutions you may have developed from your own ED coverage situation. This way your Section can remain an important voice. I can be reached via e-mail at BTANeuro2@aol.com.

Brian T. Andrews, MD, FACS, is Past Chairman, AANS/CNS Section on Neurotrauma and Critical Care and Liaison to the Board of Directors of the AANS.

At the 2000 AANS Annual Meeting, we put together an extremely well received Breakfast Session on "Emergency Department Coverage: Issues, Obligations, and Opportunities for the New Millennium." Attendance and interest from our colleagues from all over the country were tremendous. Major areas covered were the Federal EMTALA laws as they pertain both to us as neurosurgeons and to hospitals that run Emergency Departments (EDs), the current problems surrounding neuro-surgical coverage from both perspectives, and ways to try to solve these problems.

It was clear to me, as the Course Director, that these problems are national, occurring all over the United States. It appears that many hospitals rely upon Bylaws requirements that physicians must be available to the ED, often without payment for such services. It is also clear that many hospitals have turned towards payment of a stipend to guarantee the necessary coverage. In