

Chairman's Address

Mark Bernstein, MD



Mark Bernstein, MD

The Tumor Section is very excited about our Scientific Program at the upcoming AANS Meeting in New Orleans which will feature a Symposium on a very timely and interesting topic, Intra-operative MR.

Thanks to Ron Warnick for organizing this. We also are proud to be presenting awards for the best resident laboratory research paper (Preuss Award) to Sandeep Kunwar, MD; the best clinical research paper by a practicing neurosurgeon (Mahaley Award) to Douglas Kondziolka, MD; the best laboratory research by a neurosurgeon within the first 6 years of practice (Young Investigator Award), to Walter Stummer, MD; and the best translational research proposal by a practicing neurosurgeon (National Brain Tumor Foundation Award) to Adam Mamelak, MD. As well, Professor Edward Oldfield will present the Farber Lecture entitled "Biological Therapy of Gliomas: Promises, Expectations, and Challenges".

At the AANS meeting I will end my two-year term as Chairman of this Section. I have had the challenge of dealing with some interesting issues and have had the pleasure and privilege of working with a group of outstanding and unselfish people on the Executive Council. Special thanks to the Secretary Treasurer Joe Piepmeier who has done a wonderful job, and if the tradition of this Section continues, Joe will be voted in as Chairman in the spring elections. The Section will be in excellent hands with Joe at the helm. Congratulations also to Joe for recently assuming the job of new Editor-in-Chief of the Journal of Neuro-Oncology. Heartfelt thanks also to all the members of the Section for their support, inquiries, interest, and input.

Rather than listing the accomplishments of the Section over the last several years, let's look at some of the challenges facing us. Ever-present

and important challenges are to disseminate timely and constantly updated information to our members on clinical trials, sources of research funding, and multi-disciplinary discoveries and developments in neuro-oncology, and a number of our Committees are working on these initiatives. Another important area of work relates to the development of evidence-based practice parameters on a variety of neuro-oncology problems and again, work is actively underway in these areas.

A most important challenge which has recently arisen relates to embracing our skull base neurosurgical colleagues who recently made an articulate and thoughtful application to form a new Skull Base Section, which the Officers of the AANS and CNS voted not to support at this time. The Executive Council of the Tumor Section has been in agreement with this decision for a variety of reasons, but it is incumbent on the Tumor and Cerebrovascular Sections to represent our skull base colleagues as well as possible and give them a voice that they feel is being heard.

New information in the neuro-oncological related basic sciences and in neuro-oncologic clinical practice, especially related to technological advances, is accruing at a mind-boggling rate and the future of our Subspecialty of Neuro-Oncology in general and of our Section in specific is exciting indeed. The ultimate individual challenge facing all of us is to keep abreast of what's new in our Specialty and position ourselves to bring the information to bear for the better of our patients. It's an exciting time with limitless possibilities!

I thank all the Committee Chairpersons for all their great work and I thank all the Tumor Section Members for your ongoing interest in and support of the Section. Please let us know how we can better serve you. If you ever have any suggestions or inquiries please feel free to contact the Chairman, the Secretary-Treasurer, or any of the Committee Chairpersons. I look forward to seeing many of you in New Orleans in April.

In This Issue...

2

Tumor Section in the Spotlight at the 1999 AANS Annual Meeting

4

In Brief

6

Membership Committee Joins Forces With N: // OC®

7

Ask the Expert—Robert L. Martuza, MD

8

AANS Abstract Review Process

10

Minutes of the Executive Council Meeting

12

Preuss Resident's Research Award Paper

13

Mahaley Clinical Research Award Paper

13

Young Investigator Award Paper

Tumor Section in the Spotlight at the 1999 AANS Annual Meeting

Monday, April 26, 1999 Breakfast Seminars 6:45–9:30 AM

104 Primitive Neuroectodermal Tumors in Childhood: Current Management and Outcomes

Moderator: Tae Sung Park

Panelists: John Buatti, Leslie Sutton, Roberta Glick, Joseph Petronio

118 Gene Therapy of CNS Neoplasms

Moderator: Michael L.J. Apuzzo

Panelists: Zvi Ram, Mitchel Berger, Julian Wu

119 Pediatric Brain Tumors

Moderator: Harold Hoffman

Panelists: Ian Pollack, Maurice Choux, Liliana Goumnerova, Bruce Kaufman

Monday, April 26, 1999 Scientific Sessions I-IV 2:45–5:15 PM

708 Long-term Outcomes After Meningioma Radio-surgery: The Physicians and Patients Perspective

Douglas Kondziolka, Elad Levy, Ajay Niranjana, David Bissonette, John C. Flickinger, L. Dade Lunsford (Discussant: Donald Wright)

717 Awake Craniotomy or Stereotactic Biopsy for Brain Tumor Results in Median Length of Stay of 1 or 0 Days Respectively

Mark Bernstein, Michael D. Taylor (Discussant: Ivan Ciric)

718 Craniotomy for Tumor: Outcomes in High Volume Versus Low Volume Hospitals

Henry Brem, Donlin Long, Toby Gordon, Helen Bowman, Anthony Etzel, Gregg Burleyson, Simone Betchen (Discussant: Charles Byron Wilson)

720 Gliomas Genetically Engineered to Express a Model Antigen are Eradicated Subcutaneously and Protect Against Lethal Intracranial Tumor Challenge in Rats

Linda M. Liau, Steven N. Sykes, Eric R. Jensen, Jeffrey F. Miller, Donald P. Becker (Discussant: Nelson Oyesiku)

728 Intraoperative Detection of Malignant Gliomas by 5-ALA-induced Protoporphyrin-IX Fluorescence

Walter Stummer, Susanne Stocker, Peter A. Winkler, Hans J. Reulen (Discussant: Steve Brem)

729 The Surgical Treatment of Low Grade Gliomas in the Intraoperative MRI

Claudia Martin, Eben Alexander III, Ferencz Jolesz, Peter McLaren Black (Discussant: L. Dade Lunsford)

734 Radiobiology of Stereotactic Radiosurgery in Metastases and Glioblastomas. A Quantitative Longitudinal Analysis of its Effects on rCBF, Capillary Permeability, Vascular Volume, Extracellular Space, Glucose Utilization and Thallium-Uptake

Peter C. Warnke, Klaus Kopitzki, Bruni Baumer, Danny Fritzsche, Christoph B. Ostertag (Discussant: Douglas Kondziolka)

735 Miniaturized Skull Base Surgery for Anterior Fossa Lesions ("Band-aid" Skull Base Surgery)

Hae-Dong Jho (Discussant: Ossama Al-Mefty)

739 Evaluation of Radiation Effect in Glioblastoma Multiforme Patients Treated With Boron Neutron Capture Therapy at Brookhaven National Laboratory

Eric Elowitz, Jacek Capala, Douglas Cohen, Jeffrey Coderre, Aidnag Diaz, Darrel Joel, Ruimei Ma, George Tyson, Arjun Chanana (Discussant: Jeffrey Olson)

745 Concurrent Craniotomies for Multifocal Intracranial Tumors

Ian McCutcheon, Mick J. Perez-Cruet, Raymond Sawaya, John Steel (Discussant: Michael L.J. Apuzzo)

Tuesday, April 27, 1999 Breakfast Seminars 6:45–9:30 AM

208 Management of the Fourth Ventricle Tumors

Moderator: Fred Epstein

Panelists: Albert Rhoton, Jr., Rudolph Fahlbusch, Bruce Kaufman, John Buatti

212 Low-Grade Gliomas: Current Treatment and Controversies

Moderator: Michael Saleman

Panelists: Edward Laws, Mitchel Berger, Michael L.J. Apuzzo, James Rutka

216 Functional Pituitary Tumors

Moderator: Martin Weiss

Panelists: Nelson Oyesiku, Douglas Kondziolka, Diter Luitker, Daniel Kelly

220 Pediatric Tumors

Moderator: Harold Hoffman

Panelists: Ian Pollack, Maurice Choux, Liliana Goumnerova

Tuesday, April 27, 1999 Plenary Session II

9:45–11:20 AM

Moderator: Russell L. Travis

Co-Moderator: Steven L. Giannotta

748 Radiosurgery Can Preserve Hearing in Patients

With Intracanalicular Acoustic Tumors Ajay Niranjan, L. Dade Lunsford, Douglas Kondziolka, John C. Flickinger (Discussant: Donlin M. Long)

749 The Natural History of Asymptomatic, Untreated

Colloid Cysts Bruce E. Pollock, John Huston III (Discussant: William Shucart)

Tuesday, April 27, 1999 Tumor Scientific Session

2:45–5:30 PM

Special Symposium

2:45–3:45 PM

Intraoperative MRI in Brain Tumor Surgery

Moderators: Ronald E. Warnick, Mark Bernstein

Speakers: Mark Bernstein, Peter McL. Black, Walter Hall, Garrett Sutherland, Ronald Warnick, C. Rainer Wirtz

Scientific Session

3:45–5:10 PM

Moderator: Mark Bernstein

Co-Moderator: Joseph Piepmeier

807 Identification of a Putative Glioma-specific EGF-like Growth Factor Using “Differential Immuno-Absorption” Coupled to cDNA Microarray Hybridization Linda M. Liau, Roger Lallone, Stanley F. Nelson, Jeff M. Bronstein, Donald P. Becker

808 Correlation Between Radiation Response and Genetic Aberrations in Glioblastoma Multiforme Sandeep Kunwar, Gayatri Mahapatra, Stephen Huhn, Kathleen Lamborn, Andrew Bollen, Susan Chang, Michael Prados, Burt Feuerstein

809 Modulation of Microglia Motility by Glioma Cells in Mediated by Hepatocyte Growth Factor/ Scatter Factor Behnam Badie, Jill Schartner, Jessica Klaver, Jessica Vorpahl

810 Direct Correlation in CNS Malignancy of Dose Intensity to Response Rate and Duration of Survival in Pre-clinical and Clinical Trials Edward A. Neuwelt, Laura Remsen, Leslie McAllister, Dale Kraemer

811 Transsphenoidal Surgery for Cushing’s Disease: Outcome in Patients With Normal MRI Scan Patrick Semple, Mary Lee Vance, James Findling, Edward R. Laws, Jr

812 A Novel Strategy Using Intraarterial Cisplatin and Radiation Treatment Followed by Surgical Resection for Carcinoma of the Anterior and Middle Skull Base: Preliminary Results of a Phase II Trial Shekar Kurpad, K. Thomas Robbins, Frank D. Vrionis, Jon H. Robertson

813 Long-term Follow up in Patients Who Underwent Boron Neutron Capture Therapy in Japan Yoshinobu Nakagawa, Kyonghon Pooh, Katsuji Kitamura, Teruyoshi Kageji

Wednesday, April 28, 1999 Breakfast Seminars

6:45–9:30 AM

310 Third Ventricle Tumors

Moderator: Michael L. J. Apuzzo

Panelists: Alan Cohen, Joao Lobo Antunes, Christer Lindquist

318 Cranial Nerve Preservation in Acoustic Tumor Surgery

Moderator: Steven Giannotta

Panelists: Douglas Kondziolka, Stephen Haines, Bruce Pollock, Griff Harsh

Wednesday, April 28, 1999 Scientific Sessions V-VIII

9:45–11:15 AM

755 Genetic Markers Classify Anaplastic Astrocytomas Into Prognostic Groups and Explain Age-related Survival Sandeep Kunwar, Gayatri Mohapatra, Michael Prados, Burt Feuerstein (Discussant: Mark Bernstein)

756 Chemotherapy Without Irradiation for Newly Diagnosed CNS Germ Cell Tumors (GCTs): Long-term Follow-up and Quality of Life on an International Cooperative Trial Howard Weiner, Maria C. Pietanza, Casilda Balmaceda, Jonathan L. Finlay (Discussant: Bruce Kaufman)

continued on page 12

American Brain Tumor Association

Meeting the Needs of the Research Community

The American Brain Tumor Association (ABTA) has a proud history of funding research and providing education and resource information to brain tumor patients and their families. Periodically, we review and evaluate our programs to determine if they adequately fulfill the needs of the research community and our patient constituents.

Our mission is to eliminate brain tumors, provide patient services, promote excellence in patient care, and advocate for the investigation of innovative research and treatment approaches. How should our funds be used to best meet our mission?

Following is a brief overview of our current programs:

Research Awards

- Two-year Postdoctoral Basic Research Fellowships
- One-year Translational Research Grants
- Medical Student Summer Fellowships
- Professional Meeting Support
- Young Investigator Grants
- Nursing Research Grants

Education and Awareness

- Patient Education Publications
- Printed Resource Information
- Social Services
- Symposia & Town Hall Meetings
- Web site
- North American Brain Tumor Coalition

Are there new programs we should be developing, or are there unmet needs we should be addressing? Please send us your input at (847) 827-9910 or via e-mail at info@abta.org.

National Brain Tumor Foundation

Exciting Research Projects Funded by the National Brain Tumor Foundation

The National Brain Tumor Foundation and Cancer Care, Inc. are sponsoring the first patient teleconference of 1999, which will focus on the latest brain tumor treatments. This one-hour teleconference, which will take place on Tuesday, April 27, 1999, will feature Jeffrey Bruce, MD, Director of Bartoli Tumor Laboratory, and Director of Neuro-Oncology at Columbia Cancer Center. Dr. Bruce will discuss clinical trials and promising new treatments.

If your patients are interested in participating, please contact NBTF at (800) 934-2873 or via e-mail at nbtbf@braintumor.org.

NBTF Supports Genetic Research

Once again, the NBTF has been fortunate enough to provide funding for a bevy of research projects. In keeping with our research mission, we always look for projects that will move quickly from pure research to brain tumor patient applications. Also, patient quality of life studies are a high priority for our grant-funding program.

In October 1998, the NBTF awarded a grant to Robert Jenkins, MD, of the Mayo Clinic for his project to better identify the chromosome 19q tumor suppressor gene. Identification of this gene can help determine which patients will benefit from chemotherapy and which will not. The project builds on the success of another NBTF-funded study conducted last year by David Louis, MD, of Massachusetts General Hospital. This new research will expand upon the use of 19q gene beyond oligodendroglioma therapy.

In December 1998, NBTF also awarded a research grant to Tracy Batchelor, MD, of Massachusetts General Hospital to expand this genetic predictor research to mixed glioma tumors.

NBTF salutes all of our recent grant recipients for their dedicated work on behalf of patients everywhere. It is our greatest wish that their ongoing research will greatly improve the quality of life of patients with all types of brain tumors.

Brain Tumor Awareness Week Set For May 2-8, 1999

Mark your calendars now so you can do your part to increase awareness about brain tumors and promote the need for more research funding. Brain tumor patients, their families and friends are invited to participate in all the activities planned for Brain Tumor Awareness Week, which will take place May 2-8, 1999.

All the member organizations of the North American Brain Tumor Coalition will join together for a rally in Washington, D.C. on Tuesday, May 4, followed by a luncheon for members of Congress. If you can come to Washington, we will train you to meet with your congressperson. This is a great way to share your personal story with someone who can influence brain tumor research spending priorities at the National Institutes of Health (NIH). It's also a good opportunity to meet your legislators in person!

For more information, contact Janis Brewer, NBTF Executive Director and Chair of Brain Tumor Awareness Week, at (800) 934-2873.

Information in Spanish about Brain Tumors

The National Brain Tumor Foundation is currently developing patient information in Spanish and is looking for your input. If you are a health professional who works with Spanish speaking patients, or know of any Spanish speaking patients who would be willing to complete a brief questionnaire, please

contact Rob Tufel, NBTF Director of Patient Services, 785 Market Street, Suite 1600, San Francisco, California 94103. Phone (800) 934-2873.

Society for Neuro-Oncology

Plans for SNO Meeting Underway

The Society for Neuro-Oncology (SNO) will host its fourth Annual Meeting November 18-21, 1999, in Scottsdale, Arizona. SNO was formed in 1995 to bring together all disciplines interested in the treatment and research of central nervous system tumors. The deadline for abstract submission is May 15, 1999. For more information about this meeting or membership in SNO, contact Jan Esenwein at (713) 745-2344, by fax (713) 794-4999, via e-mail at esen@audumla.mdacc.tmc.edu. or visit SNO's Web site at www.socneuro-onc.org.

Radiation Therapy Oncology Group

RTOG Wants You

The Radiation Therapy Oncology Group (RTOG) is actively soliciting involvement from neurosurgeons at participating institutions. The AANS/CNS Section on Tumors is working with the Neurosurgical Subcommittee of the RTOG to establish new protocols involving both surgical and radiation therapy modalities. The RTOG hosts bi-annual meetings, at which time new concepts and protocols are discussed. Funding is available for full protocol involvement, as well as the investigation of specific scientific questions using the clinical and research structure of the RTOG.

Members of the Tumor Section who are at participating institutions should submit outlines of discussion or research proposals to either Dennis Bullard, MD, or Karen Johnston, MD, for inclusion at the time of the RTOG Neurosurgical Subcommittee Meetings. It is hoped that the Tumor Section and the Neurosurgical Subcommittee can work together to further develop these research topics.

Please submit research proposals to:

Dennis E. Bullard, MD
Raleigh Neurosurgical Clinic, Inc.
3700 Barrett Drive
Raleigh, NC 27609
(919)-785-3400
(919)-783-7778 (fax)

Neuro-Oncology Funding Opportunities

Current funding sources (and phone numbers) relevant to brain tumor research include:

AANS Young Investigator Award (847) 692-9500
American Brain Tumor Association (847) 827-9910
American Cancer Society (404) 329-7612
American Institute for Cancer Research (202) 328-7744
Cancer Control Research Program-NIH/NCI (301) 496-8520
Cancer Research Foundation of America (703) 836-4412
Fogarty International Center (301) 496-1653
National Brain Tumor Foundation (800) 934-2873
Pfizer Postdoctoral Fellowships (800) 201-1214
Sloan Basic Research Fellowships (212) 649-1649
Dept. of Health and Human Services (301) 496-9248
James S. McDonnell Foundation (314) 721-2532
Small Business Innovative Research (301) 206-9385
North American Brain Tumor Coalition which includes:
Acoustic Neuroma Association of Canada (403) 428-3384
Brain Tumor Foundation of Canada (519) 642-7755
National Brain Tumor Foundation (800) 934-2873
The Brain Tumor Society (617) 783-9712
American Brain Tumor Association (847) 827-9910
Children's Brain Tumor Foundation (212) 448-9494
Pediatric Brain Tumor Foundation of the U.S. (704) 665-6891
The Preuss Foundation (619) 454-0200

Use NIH Web Site as a Resource

A good step for increasing the success rate for published initiatives is to search the previously funded NIH grants through the CRISP database of funded applications at <http://www.nih.gov/grants/award/award.htm> or through the Community of Science Web site at <http://www.cos.com>.

The AANS/CNS Section on Tumors Research Committee is interested in input from our members. Please forward your suggestions and ideas to Roberta P. Glick, MD, at (312) 633-6328 or by fax at (312) 633-6494.

Membership Committee Joins Forces With N: // OC®

Anthony Asher, MD

The Membership Services Committee of the AANS/CNS Section on Tumors has partnered with **NEUROSURGERY://ON-CALL®** (www.neurosurgery.org) to develop Internet-based resources related to brain tumor research and therapy. The services under development include:

- (1) Expanded lists of neuro-oncology fellowships, funding sources, and meetings of interest.
- (2) Links to related Web sites.
- (3) An online listing of current publications that will be updated monthly. Members will have the opportunity to view a list of new brain tumor publications and book reviews and order textbooks of interest online.
- (4) An online membership directory that will allow searches by name, institution, or geographical location. Several unique features will be available through the membership directory including direct e-mail, list serve capabilities, and links to member Web sites.
- (5) A national survey on negative brain tumor trials that will be coordinated by Tom Chen, MD, from the University of California (Los Angeles).
- (6) Members will have the opportunity to submit brain tumor questions that will be addressed on the basis of information available through the National Cancer Data Base. This service is to be coordinated by Herb

Engelhard, MD, from Northwestern University (Evanston).

- (7) A listing of support resources for brain tumor patients and their families.
- (8) A multidisciplinary effort designed to provide a concise summary of literature relevant to neuro-oncology on a quarterly basis. This particular service is being offered jointly with the Society for Neuro-Oncology.
- (9) Tumor Section members will also have the opportunity to interact with members of the Society for Neuro-Oncology through links to the SNO Web site. We are particularly excited about links to multidisciplinary online discussion groups focused on brain tumor diagnosis and treatment.

In the near future, we will be sending all AANS/CNS Section on Tumor members a notice with additional information regarding the membership directory, e-mail services, and discussion groups. We expect that most of these services will be available by the late fall. If you do not have e-mail or Internet access, we strongly encourage you to acquire these capabilities soon so that you can take advantage of these new services.

Internet Sites Pertaining to Neuro-Oncology

A number of Internet resources are now available to investigators, physicians, and patients. Some of the more recent Web sites include:

Human Genome Project

http://www.ornl.gov/TechResources/Human_Genome/research.html

National Library of Medicine

<http://www.nlm.nih.gov/databases/freemedl.html>

American Brain Tumor Association

<http://www.abta.org>

Brain Tumor Foundation of Canada

<http://www.btfc.org>

National Brain Tumor Foundation

<http://www.braintumor.org>

Pediatric Brain Tumor Foundation of the United States

<http://www.ride4kids.org>

The Brain Tumor Society

<http://www.tbts.org>

Clinical Trials and Noteworthy Treatments for Brain Tumors

<http://virtualtrials.com>

PDQ Brain Tumor Trials

<http://cancernet.nci.nih.gov>

American Association for Cancer Research

<http://www.aacr.org>

Physician Online Center Watch

<http://www.pol.net>

Society for Neuro-Oncology

<http://www.socneuro-onc.org>

Ask the Expert—Robert L. Martuza, MD

Ronald Warnick, MD

Following is a profile highlighting Robert L. Martuza, MD, and the novel gene therapy trials he is conducting out of Georgetown University and the University of Alabama. This is the first in a series of profiles that highlight the research of a prominent neurosurgeon in the medical community.

- Q.** Can you describe the G207 herpes mutant that is currently in Phase I testing at Georgetown University and the University of Alabama?
- A.** G207 is a vector derived from a herpes simplex virus – type 1 known as strain F. The G207 has deletions of both copies of the ICP34.5 genes and an inactivating mutation of the ICP6 gene (inactivated due to insertion of a lacZ gene).
- Q.** What features distinguish this virus from other herpes mutants?
- A.** Having several widely spaced deletions and mutations, reversion to wild-type is unlikely. Both the ICP34.5 and ICP6 mutations lead to decreased neuropathogenicity. Moreover, the ICP6 mutation selects for viral replication in growing cells such as those present in a malignancy.
- Q.** Can you highlight some of the challenges that you encountered during the FDA approval process?
- A.** The FDA was helpful. We had three meetings with them plus other conversations. They, like we, were concerned about various safety aspects. Indeed, they posed several questions at our early meetings that lead to further experiments to demonstrate safety. We ultimately met all questions with experimental evidence and received permission to proceed.
- Q.** Which patients are eligible for the current Phase 1 clinical trial?
- A.** The inclusion criteria and exclusion criteria are extensive as you might expect, but basically patients with recurrent malignant glioma after radiotherapy (and chemotherapy) are eligible. This includes glioblastoma, anaplastic astrocytoma, and gliosarcoma in adult patients with a Karnofsky of 70 or more.
- Q.** Can you describe the protocol treatment regimen?
- A.** Under local anesthesia, via a burr hole, the virus is delivered stereotactically into a locus in the enhancing area of the tumor.
- Q.** Was stereotactic administration chosen to allow assessment of tumor response?
- A.** In this Phase I dose escalating study of potential toxicity, we have chosen to inoculate into the enhancing tumor. In later studies we are considering other inoculation strategies.
- Q.** Can you describe the study endpoints?
- A.** Since this is a Phase I study, we are following patient MRI scans, clinical status and survival, as well as multiple laboratory tests.
- Q.** What is the current status of the Phase I study?
- A.** Neurovir, Inc. is the sponsor of the Phase I study and James Markert, MD, at the University of Alabama and Michael Medlock, MD, at Georgetown University are the Principal Investigators for the Phase 1 study in progress. We have entered 15 patients in the study thus far and have not seen HSV-related toxicity and we continue to dose escalate. Presentations of the data will first be to the FDA and to both internal and external review committees and then to various meetings such as the AANS/CNS, as well as cancer and herpes virus meetings.
- Q.** What are your plans for a Phase II study?
- A.** We are currently evaluating the state of the ongoing Phase I study and are preliminarily planning for a possible multi-center Phase II study.
- Q.** Are you planning clinical trials with G207 for other tumor types?
- A.** Plans are being made to file for approval of HSV-therapy of other tumors including tumors outside of the nervous system.
- Q.** Do you have any new viral constructs under development in the laboratory that have promise for translation to clinical trials?
- A.** There are vectors that have different constructions and properties that are expected to go into clinical trial in the near future.
- Q.** Do you have any final thoughts about the prospects of herpes gene therapy for malignant glioma?
- A.** I think this is a very exciting time. Thus far we have not seen early stage toxicity and have been able to escalate several logs in the Phase I G207 trial. G207 was designed with safety foremost in mind. However, HSV is a very large virus and can be altered in many potentially useful ways. Having shown the safety of G207 at high titer, for example, one may wish to consider a more actively growing or less attenuated vector. One can also consider other routes of administration, treatment of other tumor types, and the insertion of other genes. Recent work from our laboratory suggests that such vectors also may be used to stimulate an antitumor immune response. This and related vectors have now been studied in many laboratories by investigators and efficacy is convincing in multiple animal tumor models. We now need to optimize this in people. That is the real challenge.

The AANS Abstract Review Process — Everything You Always Wanted to Know, But Were Afraid to Ask

Ronald Warnick, MD

Most AANS/CNS Tumor Section members are familiar with the procedures for abstract submission to the AANS Annual Meeting. However, the mechanics of the abstract selection process are largely unknown and remain somewhat mysterious. Following is a description of the abstract review process that was used for the upcoming AANS Annual Meeting. I hope it will give you a better understanding of the review process and assist you in planning future abstract submissions.

Methods for Selection

All abstracts for the 1999 AANS Meeting were submitted through the Online Abstract Center (**NEUROSURGERY://ON-CALL**[®]). The designated reviewers were provided a code number and password to allow online review and scoring of the abstracts. Tumor abstracts were individually reviewed by five members of the AANS Scientific Program Committee and five members of the Executive Committee of the Section on Tumors.

Abstracts were assigned a score of 1 (lowest) to 5 (highest) and separate scores were provided for each requested presentation format (i.e., oral and poster). Reviewers did not grade abstracts when a conflict of interest existed (i.e., same institution). At the completion of the grading process, the individual scores of the five Tumor Section reviewers were averaged to determine the Tumor Section Composite Score. The final abstract score was calculated by averaging the Tumor Section composite score (1/6 weight) with the scores of the five AANS Scientific Program Committee Members (5/6 weight).

The Executive Committee of the Section on Tumors received a list of the top 60 tumor abstracts based on composite scores. This ranking formed the basis for selection of the AANS/CNS Section on Tumors awards including the Preuss Award (best resident laboratory research paper), Mahaley Award (best clinical research paper by a practicing neurosurgeon), and Young Investigator Award (best laboratory research paper by a neurosurgeon within the first six years of practice). The AANS Scientific Program Committee then selected tumor abstracts appropriate for oral presentation in the Plenary Sessions and the Section's afternoon program, as well as poster presentations. Notification letters were generated by the National Office and distributed a few weeks later.

Tumor Section in the Spotlight

A total of 205 tumor abstracts were submitted for the 1999 AANS Annual Meeting in New Orleans. The majority of abstracts (66 percent) were submitted for consideration as either oral or poster presentations, whereas the remainder specified oral presentation only (19 percent) or poster presentation only (15 percent).

Clinical abstracts far out-numbered basic science abstracts (79 percent vs. 21 percent). Common clinical topics included:

(1) Retrospective reviews of defined patient groups (i.e., pituitary adenomas in children), (2) Surgical techniques, (3) Clinicopathologic or molecular correlative studies, (4) Radiation or chemotherapy approaches, and (5) Case reports. The basic science abstracts generally focused on translational therapy (gene therapy, immunotherapy, and targeted toxins) or cellular mechanisms such as signal transduction, angiogenesis, apoptosis, and invasion.

Of the 205 submitted tumor abstracts, 168 (82 percent) were selected for oral or poster presentation. Thirty-three abstracts (16 percent) were accepted for oral presentation and the vast majority had a clinical focus (n=29). These selected oral presentation abstracts fell into one of several clinical categories: (1) Phase III clinical trial results, (2) Large series of an uncommon clinical entity (i.e., plexus tumors), (3) Innovative surgical techniques, (4) Molecular prognostic factors, and (5) High impact medical economics. Interestingly, all four basic science abstracts accepted for oral presentation described unique translational therapies for malignant glioma.

At the other end of the spectrum, 37 tumor abstracts were rejected (18 percent). None of the 17 abstracts reporting a single case study were accepted for presentation. The other unsuccessful abstracts were submitted for oral presentation only, but were not competitive because of small patient numbers, lack of innovation, or insufficient abstract details.

What Does This Mean For You?

The AANS abstract selection process is a complex, yet highly organized series of events that receives significant input from the AANS/CNS Section on Tumors. The overall high acceptance rate (82 percent) for tumor abstracts allows for broad participation by our Section members in the AANS Annual Meeting.

Because of the relatively small number of oral presentation slots (four) in the Section's afternoon session, only the most outstanding tumor abstracts are competitive for the free papers session. The Executive Committee of the Section on Tumors is currently working with AANS leadership to allow a greater number of short oral presentations in the Section's afternoon session. This will provide greater opportunities for our Section members.

Editor's note: It should be noted that this article only describes the AANS abstract review process and may not be directly applicable to the CNS Annual Meeting which has a different meeting format and abstract review process.

Application for Membership

AANS/CNS Section on Tumors



Biographical Material

Name: _____

Birth Place: _____ Birth Date: _____

Home Address: _____ Office Address: _____

Fax: _____ Phone: _____ Fax: _____ Phone: _____

E-mail address: _____ E-mail address: _____

I wish to apply for:

Active Membership International Membership Resident Membership*

*If applying for Resident Membership please have Program Director forward confirmation of your resident status.

Program: _____ Year of anticipated completion _____

Director: _____

Are you a member of:

The American Association of Neurological Surgeons? Yes No

Active Active (Foreign) Active (Provisional) Associate
 Candidate International Associate Honorary Lifetime

Congress of Neurological Surgeons? Yes No

Active Honorary International Resident Senior

Are you currently involved in active brain tumor research?

Clinical: Yes No Basic: Yes No

Please send your complete application and curriculum vitae to:

Michael W. McDermott, MD

University of California, San Francisco

533 Parnassus Ave., U-126

San Francisco, CA 94122-2722

Minutes of the Executive Council Meeting

Joseph M. Piepmeier, MD

AANS/CNS Section of Tumors October 5, 1998 ■ Seattle, Washington

The Executive Council of the AANS/CNS Section on Tumors was called to order at 6:30 AM by the Chairman, Mark Bernstein, MD. In attendance were Anthony Asher, MD; Mitchel Berger, MD; Peter Black, MD; William Chandler, MD; William Couldwell, MD; Roberta Glick, MD; Edward Laws, MD; Timothy Mapstone, MD; Michael McDermott, MD; Nelson Oyesiku, MD; Joseph Piepmeier, MD; Jack Rock, MD; James Rutka, MD; Laligam Sekhar, MD; and Ronald Warnick, MD.

Committee Reports

Secretary/Treasurer's Report

The minutes from the Executive Council's meeting on April 27, 1998 in Philadelphia, were accepted without change. The financial report for the past year was presented and the Section remains in sound financial shape. No fiscal concerns were raised. The Tumor Section/AACR conference in San Diego (June 7-11, 1997) had a deficit of \$26,843. The Tumor Section agreed to cover half of this deficit (\$13,400).

Awards Committee

Award winners at the 1998 CNS Annual Meeting were:

| | |
|--------------------------|------------------|
| Preuss Award | Bob Carter, MD |
| Young Investigator Award | Eric Elowitz, MD |
| Mahaley Award | Byron Young, MD |

A standardized format for awards management was prepared by Dr. Black and adopted. The suggestion was made to include a check box on abstract forms to denote whether the author is a resident or practicing neurosurgeon. This will help determine appropriate candidates for awards.

Bylaws Committee

Dr. Rock has finished his work on the bylaw revision. A quorum of five members is required for business and the final copy will be mailed soon. The bylaws revision has been approved by the AANS Executive Committee and is pending review by the CNS Executive Committee. Final approval should be obtained by February 1999.

Education Committee

Dr. Couldwell has completed his listing of fellowships in neuro-oncology, which will be published in the *Journal of Neuro-Oncology*. He will now begin a project to outline requirements for residency training and medical schools. Dr. Laws, speaking as a representative of the RRC, added that the RRC is reviewing fellowships to provide accreditation without certification.

Requirements will include that the fellowships must be served after completing a residency and must have specific goals and objectives as per the ACGME. Dr. Berger added those core curricula for residents should be from the Executive Committee and will be completed in collaboration with the Congress of Neurological Surgeon's Education Committee.

A final draft of the fellowship criteria in neuro-oncology is now being completed and will be presented at the 1999 AANS Annual Meeting. Dr. Couldwell and Vince Traynelis, MD, have produced an initial draft of a resident curriculum for tumor-related neurosurgery. This project is a joint effort between the AANS/CNS Section on Tumors and CNS Education Committee.

Membership Committee

Dr. McDermott sent 112 letters to program directors recruiting new members. He received 31 new applications, 14 of which came from the Satellite Symposium in Philadelphia, Pennsylvania. The current membership is near 660 and Dr. McDermott will continue to pursue membership recruitment.

Membership Services Committee

Dr. Asher has completed a formidable task of adding services in collaboration with the official Web site of the AANS and CNS — **NEUROSURGERY://ON-CALL®**. These include tumor-related publications, fellowship listings, research support and grant opportunities, meetings/educational resources, negative trial survey, support services for the **N://OC®** Public Pages, national cancer database, and a select review in neuro-oncology. The latter project will encompass the use of 30 reviewers from all the related disciplines to provide reviews of related publications. This will be updated quarterly and will require users to download Acrobat Reader off of **N://OC®**.

Program Committee

Dr. Rock reported that CNS Annual Meeting speakers have been confirmed. Dr. Warnick will serve as Program Chair for the 1999 AANS meeting. He plans a symposium on intraoperative MRI to include six talks on concepts, applications, use and case summary. Dr. McDermott will plan the CNS program for 1999 at the Program Committee meeting.

Research Committee

Dr. Glick provided information on grant writing and a list of funding opportunities. It was clarified that Dr. Bullard can assist with the RTOG as a source of funding if your hospital is a RTOG member.

Guidelines Committee

Dr. Rock updated the Metastasis Guideline. The literature search has been conducted and the goal is to complete the project by summer 1999. A similar project was announced by

the National Cancer Cooperative Network, which includes 15 centers trying to establish guidelines for cancer management from evidence-based data. This will be published in *Oncology*.

The literature review has been finalized and we will be meeting during the AANS Annual Meeting to screen the literature and determine the key articles which will serve as the foundation for the Treatment of a Single Brain Metastasis in an Adult Guideline. All the work to date has been handled via the Internet. The initial literature review is comprised of 75 articles. Stephen Haines, MD, and Beverly Walters, MD, will facilitate the upcoming review meeting. Other team members include Jack Rock, MD (neurosurgery), Mark Bernstein, MD (neurosurgery), Raymond Sawaya, MD (neurosurgery), Tom Mikkelsen, MD (neuro-oncology), Larry Recht, MD (neuro-oncology), and Jay Loeffler, MD (radiation oncology). It is anticipated that the Guidelines will be complete by October 1999.

Other Business

1998 Satellite Symposium

Dr. Rutka reported financial data from the symposium of the 1998 AANS Annual Meeting. The Section generated over \$9,000 in profit. Discussion was held regarding the next Satellite Symposium. The 1999 CNS meeting in Boston will conflict with the next Society for Neuro-Oncology meeting; therefore, the next likely Symposium will be held at the 2000 AANS meeting, but further plans will need to be explored. Ideas for new practical courses were requested. The Devices and Radiation Health Panel of the FDA has requested a representative, and Dr. Sekhar will step forward for our discipline.

Skull Base Section

Dr. Sekhar presented reasons for a new Skull Base Section: 1) Surgery encompasses several different pathologies, 2) Education and scientific needs, and 3) Encroachment upon skull base surgery by ENT. Tom Origitano, MD, was invited to participate in the discussion. The suggestion was made to form an ad hoc committee to evaluate ways to meet the needs of skull base surgeons within the existing section.

Journal of Neuro-oncology

Dr. Piepmeier will become the new Editor of the *Journal of Neuro-Oncology*. It also was decided that when Kluwer determines a reduced subscription rate for Tumor Section members, a subscription box would be added as an optional line item on the membership statement.

American College of Surgeons Oncology Group

As the American College of Surgeons Oncology Group Chair for Neurosurgery, Dr. Laws solicited new ideas for clinical trials.

GO Project

The GO project is currently accumulating data from brain tumor patients and hopefully will have some conclusions soon.

The meeting was adjourned at 8 AM.

Tumor Section Makes Plans for 1999 CNS Annual Meeting

The plans for the 1999 CNS Annual Meeting in Boston, Massachusetts are well underway. Following is a glimpse at the Tumor Section's Scientific Program planned for this year's meeting.

Monday, November 1, 1999

Spinal Cord Neoplasms

Moderators: Joseph Piepmeier, MD; Michael McDermott, MD

2-2:25 PM **Pathology of Intramedullary Tumors**

Faculty: Catherine Daumas-Duport, MD

2:25-2:50 PM **Adjuvant Therapies for Spinal Cord Tumors**

Faculty: Paul McCormick, MD

3:30-4 PM **Oral Posters**

Moderators: Ronald Warnick, MD; Anthony Asher, MD

3:30-4 PM **Coffee Break with Exhibitors**

4-5:30 PM **Open Papers**

Moderators: William Couldwell, MD, PhD; Roberta Glick, MD

Preuss Award

Young Investigator Award

Tuesday, November 2, 1999

Issues in Skull Base Surgery

Moderators: Ossama Al-Mefty, MD; Thomas Origitano, MD, PhD

2-2:20 PM **Update on the Biology of Meningiomas and Implications for Non-Operative Treatment**

Faculty: Randy Jensen, MD

2:20-2:40 PM **Cranial Base Surgery for Malignant Tumors: When and When Not to Operate**

Faculty: Franco De Monte, MD, FACS

2:40-2:50 PM **Oral Posters**

Moderators: James Markert, MD; Michael McDermott, MD

3:30-4 PM **Coffee Break with Exhibitors**

4-5:30 PM **Open Papers**

Moderators: Raymond Sawaya, MD; James Rutka, MD

Mahaley Award

Preuss Resident's Research Award Paper

Genetic Markers Classify Anaplastic Astrocytomas Into Prognostic Groups and Explain Age-related Survival

Sandeep Kunwar, Gayatry Mohapatra, Michael Prados, Burt Feuerstein

Objectives: Anaplastic astrocytomas (AAs) have the potential for further malignant progression and have age-dependent survival. To improve prognostic assessment and better understand tumor behavior, we used comparative genomic hybridization (CGH) to search for genotypic groups among AAs and examined their association with clinical parameters.

Methods: CGH was performed on 35 histologically confirmed AAs. The ratio of FITC(green)-labeled tumor versus TR(red)-labeled normal DNA hybridized to normal metaphase spreads was used to determine chromosomal gains and losses. Clinical data was obtained by chart review.

Results: Chromosomal aberrations were associated with age and survival. -4q,-10,+7p, +19 and +5p occurred more often in patients >45 yo, while +11p was detected in younger patients ($p<0.05$, Fisher exact test). +8q, +10p, -12q and -14q also occurred within defined age groups. Tumors with +7p or +7q were associated with a shorter median survival, while tumors with -4q had longer survival, independent of age ($p<0.05$, logrank exact test). Overall, patients with normal 7 had significantly longer survival than patients with gains on 7 (5-year survival, 84 percent versus 16 percent respectively, $p=0.002$, logrank exact). +7p, +7q, +8q and -10 were associated with a shorter progression free survival, independent of age ($p<0.05$, longrank exact).

Conclusion: These results indicate that age influences the genetic pathways in tumor development and that genetic markers better predict survival than current prognostic indicators. We will further discuss the clinical correlates of these observations in comparison to changes seen in glioblastoma patients.

Meeting Highlights continued from page 3

- 760 **Use of Intraoperative Ultrasound to Control the Extent of Tumor Resection in Supratentorial Gliomas: Comparison With Postoperative MRI and Histopathological Findings** Michael Woydt, A. Horowski, A. Krone, G. Becker, E. Hoffman, K. Roosen (Discussant: Richard Bucholz)
- 765 **Extent of Tumor Resection and Survival of Patients With Glioma** Michael Lacroix, Dima Abi-Said, Weiming Shi, Franco DeMonte, Ziya Gokaslan, Frederick Lang, Ian McCutcheon, Samuel Hassenbusch, Raymond Sawaya (Discussant: TBD)
- 772 **Growth Regulated Oncogene in Oligodendrogliomas: Constitutive Activation of a Proliferative Pathway** Shenandoah Robinson, J. Levine, M. Cohen, Robert H. Miller, (Discussant: Mitchel Berger)
- 774 **Depression is an Under Treated Complication in Patients With High Grade Glioma: Preliminary Results of the Glioma Outcomes Project** N. Scott Litofsky, Frederick Anderson, Edward R. Laws, Jr., and the Glioma Outcomes Project Investigators (Discussant: Griffith R. Harsh IV)

Thursday, April 29, 1999 Breakfast Seminars 6:45–9:30 AM

- 405 **Treatment Options for Primary and Recurrent Arachnoid Cysts**
Moderator: Marion Walker
Panelists: David Jimenez, Dale Swift, Kiyoshi Sato
- 416 **Advanced Techniques in the Treatment of Pituitary Tumors**
Moderator: Edward R. Laws, Jr.
Panelists: Kalmon Post, Alex Landolt, Gail Rosseau



St. Louis Cathedral is the country's oldest active cathedral, located in the heart of the French Quarter, Jackson Square. Photo courtesy of NOMCVB.

Mahaley Clinical Research Award Paper

Stereotactic Radiosurgery Plus Whole Brain Radiotherapy Versus Whole Brain Radiotherapy Alone for Patients With Multiple Brain Metastases: A Prospective, Randomized Trial

Douglas Kondziolka, Atul Patel, L. Dade Lunsford, Amin Kassam, John C. Flickinger

Objective: Multiple brain metastases are a common problem with a poor prognosis. Radiosurgery is effective for patients with solitary brain metastases that leads to long-term local tumor control and improved survival in case series. We hypothesized that radiosurgery plus whole brain radiotherapy (WBRT) would provide a 40 percent improvement in local brain tumor control over WBRT alone (the primary outcome) that would relate to improved survival in patients with 2-4 brain metastases.

Methods: Patients with 2-4 tumors, all <25mm diameter and known primary tumor type, were randomized to initial care with WBRT alone (30 Gy in 10 fractions) or WBRT plus radiosurgery. Extent of extracranial cancer, tumor diameter, and functional status were recorded.

Results: An interim analysis was performed at 2/3 accrual. Twenty-seven patients were randomized (14 to WBRT alone and 13 to WBRT plus radiosurgery). The groups were

well matched to age, sex, tumor type, number of tumors, and extent of extracranial disease. The rate of local failure at one year was 100 percent after WBRT alone but only 8 percent in patients who had boost radiosurgery. The median time to local failure was six months after WBRT alone (95 percent C.I., 3.5-8.5) in comparison to 36 months (95 percent C.I., 15.6-57) after WBRT plus radiosurgery ($p=0.0005$). The median time to any brain failure was improved in the radiosurgery group ($p=0.002$). Tumor control did not depend on histology ($p=0.85$), number of initial brain metastases ($p=0.25$), or extent of extracranial disease ($p=0.26$). Patients in the initial WBRT alone group lived a median of 7.5 months, while those that received WBRT plus radiosurgery lived 11 months ($p=0.22$). However, since some WBRT alone patients had later radiosurgery for treatment of tumor progression, a survival difference was found between WBRT alone, and WBRT plus delayed radiosurgery, and WBRT plus initial radiosurgery ($p=0.04$). There was no neurologic or systemic morbidity related to radiosurgery.

Conclusion: Combined radiosurgery and whole brain radiotherapy for patients with two to four brain metastases significantly improves control of brain disease and this leads to a survival benefit. Whole brain radiotherapy alone does not provide lasting and effective care for most patients.

Young Investigator Award Paper

Intraoperative Detection of Malignant Gliomas by 5-ALA-induced Photoporphyrin-IX Fluorescence

Walter Stummer, Susanne Stocker, Peter A. Winkler, Hans J. Reulen

Objective: Survival from malignant glioma is linked to the completeness of tumor removal. Therefore, methods that permit intraoperative identification of residual tumor tissue may be of benefit. To this purpose, we have studied the value of fluorescent porphyrins, which are known to accumulate in malignant tissue after administration of a precursor, 5-aminolaevulinic acid (5-ALA), for labeling and enhancing resection of malignant glioma.

Methods: Thirty-seven patients with malignant gliomas received 20mg/kg 5-ALA orally three hours before anesthesia. Intraoperative fluorescence visualization was accomplished by a 455nm longpass filter integrated into the operating microscope and illumination with violet-blue (375-440nm) xenon-light. Biopsies were taken from the tumor border, based on the

presence or absence of fluorescence. Survival analysis was performed to assess the influence of histology, age, residual intraoperative fluorescence of residual enhancement in early post-operative MRI.

Results: Normal brain tissue revealed no porphyrin fluorescence whereas tumor tissue was easily distinguished by lucid red fluorescence. In 283 tissue biopsies, sensitivity was 86.9 percent and specificity 100 percent. Falsely negative samples contained gross necrosis (4 of 31 biopsies) or tumor of low cellular density (21 of 31 biopsies). Survival was superior in younger patients without residual intraoperative fluorescence, marginally superior in patients without residual enhancement on MRI, and superior in all patients operated on with 5-ALA compared to a historic collective ($n=89$, 1990-1992).

Conclusion: Our observations suggest that 5-ALA-induced porphyrin fluorescence labels malignant glioma accurately enough for more complete tumor removal, thus prolonging survival, especially if residual fluorescence is removed completely.

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