



Cerebrovascular Surgery

Editor: Philip Stieg, PhD, MD

Issue 2 ♦ Volume 2

Editor's Note

This is the second issue of the Joint Section on Cerebrovascular Surgery Newsletter using the new format. I hope that you all find it user-friendly and informative. Any comments would be pleasantly received by me.

In this issue, we are trying to bring you up to date with the Joint Section's activities. You will see that the Section is busy putting together its first annual meeting, which will be a satellite to the International Stroke Meeting in San Antonio, Texas, in January of 1996. Issam A. Awad, MD, and his group have done a spectacular job of coordinating the meeting. You will find an enclosed announcement, as well as a call for abstracts. We encourage the participation of the neurosurgical community in the Stroke meeting. Over the past several years, this has been the case and we would like to continue this pattern.

As I am sure you are all aware, there are increasing numbers of carotid endarterectomies being performed since the publication of the ACAS study. Marc Mayberg, MD, has provided a brief summary of the Carotid Endarterectomy Task Force Report. Warren Selman, MD, has also briefly described the Section's activities regarding "Brain Attack." Also included, is an excellent review on the management of asymptomatic carotid artery stenosis by Christopher Loftus, MD. We would encourage neurosurgeons with an interest in cerebrovascular disease to become active in the management of carotid occlusive disease. The Joint Section is sponsoring a number of practical courses on this subject. Several members of the Executive Committee are also putting together brochures summarizing their experiences and methods used to increase their carotid endarterectomy caseload.

The Joint Section has also been actively recruiting new members. Dr. Awad provides a summary of these activities. We have also enclosed an application for membership.

Joseph Zabramski, MD, has been coordinating the program for the Joint Section Meeting in San Francisco during the Congress of Neurological Surgeons Annual Meeting. The focus of this meeting will be cavernous malformations and Dr. Zabramski has put together an excellent program. We hope that you will all be able to attend.

The Joint Section is also interested in fostering any endeavors into research. To this end, Robert J. Dempsey, MD, has provided a brief research report, including funding sources. We hope you find this helpful.

We would also like to add a new section in upcoming issues focusing on new events in your community or academic setting. If you have any information that you feel is newsworthy and you would like to announce it to the membership of the Joint Section, please do not hesitate to forward it to my office. Also, anyone interested in participating in the organization of the newsletter should feel encouraged to contact me. I hope you enjoy this issue.

Philip E. Stieg, PhD, MD
Brigham & Women's Hospital
Division of Neurosurgery - PBB-Balc.
75 Francis Street
Boston, MA 02115

Phone: 617/732-7676; Fax: 617/734-8342

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Joint Section on Cerebrovascular Surgery Plans First Annual Meeting — January 23–25, 1996

This represents the first scientific meeting of the Joint Section on Cerebrovascular Surgery of The American Association of Neurological Surgeons and the Congress of Neurological Surgeons, and will be dedicated to issues of professional and scientific interest to cerebrovascular surgeons. The meeting will immediately precede and share the hotel venue with the International Stroke Conference, increasing our representation and participation in that multidisciplinary cerebrovascular scientific forum. Conversely, we are also hoping that colleagues from neurology, interventional neurology, and others will also attend our meeting, most notably the Thursday morning session which will be dedicated to carotid surgery and brain ischemia. Separate registration categories will be provided for neurology colleagues who are attending the Stroke Conference, and who wish to attend this Thursday morning session.

Abstract forms will be mailed to neurosurgeons, vascular neurologists, and interventional radiologists. They are also included in this issue of Cerebrovascular Surgery. Other abstract forms may be obtained by contacting the AANS meetings office (phone 708/692-9500, fax 708/692-2589; or Dr. Issam Awad's office, Chairman of the Organizing Committee, phone 203/737-2096, fax 203/785-6916).

The abstract deadline is September 15, 1995. Oral presentations will be selected according to the individual categories of the respective scientific sessions. Meritorious posters will be selected for the presentation, and ample time will be provided for poster viewing and mingling with the exhibitors. Abstracts which have been submitted for consideration at the American Heart Association (AHA) Stroke Conference (immediately following our meeting) may also be submitted for consideration at the Cerebrovascular Surgery Meeting. Those abstracts that are selected will be used for oral and poster presentation at our meeting. Abstracts that will not be accepted for presentation at the Stroke Conference will be reviewed for possible presentation at the Cerebrovascular Surgery meeting.

A number of invited presentations by leading specialists in the field have also been arranged. These will summarize the "current state of the art" and provide a broad survey of the literature and current controversies. These brief invited presentations will set the tone for the open abstract sessions on the respective topics. There will be luncheon discussion groups covering a number of topics on Wednesday, allowing ample time for interaction with selected consultations on focused topics.

The Organizing Committee of the 1996 Annual Meeting of the Joint Section on Cerebrovascular Surgery is extremely enthusiastic about hosting you in San Antonio, and looks forward to your active participation in this first dedicated meeting of our Section.

About San Antonio

You are about to discover San Antonio—a rare gem of a city steeped in picturesque beauty, colorful international history, and teeming with exciting contrasts. Here, sparkling cool waterways and cobblestone paths wind their way past centuries-old cypress trees; and sophisticated skyscrapers rub shoulders with quaint Spanish missions. You'll find no other city to match this charming, conveniently located meeting destination.



San Antonio Marriott River Center

Today, the San Antonio Marriott River Center stands as a showcase of style and convenience. And the San Antonio Marriott River Center brings you the very best of all that is San Antonio.

Rising up from the scenic banks of the San Antonio River and adjoining the spectacular River Center shopping complex, the San Antonio Marriott River Center offers grand new dimensions of luxury and convenience, superb dining, and a wide range of recreation and fitness options.

Less than 10 minutes from San Antonio International Airport, this premier convention hotel is within easy reach of all major San Antonio attractions.



Joint Section on Cerebrovascular Surgery Fall CNS Meeting Program

The fall meeting program for the Joint Section of Cerebrovascular Surgery will tackle the topic of cavernous malformations. With the advent of magnetic resonance (MR) imaging, cavernous malformations have gone from a rare, obscure lesion to one of the most common vascular malformations seen in referral by the neurosurgeon. Autopsy and screening studies with MR imaging have confirmed that these lesions affect 0.4% to 0.5% of the population, or roughly 1 in every 250 individuals. Approximately 60% of patients seen in referral are symptomatic with seizures being the most common presentation supratentorially while focal neurological deficits from local mass effect predominate in the posterior fossa and brain stem.

Recognition of the increasing clinical importance of these lesions has led to extensive research and an explosion in our understanding of their biology, genetics, and natural history. The surgical management of these lesions, has also undergone significant evolution, particularly for those lesions involving the brain stem and deep subcortical white matter.

With this information as background, the program committee concluded that an update on cavernous malformations might well be useful to our membership. A special one-hour program has been assembled and will feature Robert Ojemann, MD, discussing operative indications and techniques. Dr. Ojemann's well-recognized expertise in the surgical treatment of deep supratentorial lesions and posterior fossa masses should be of particular interest with regards to the management of cavernous malformations located in the brain stem and deep subcortical structures. Issam

Awad, MD, will discuss the biology, histopathology and classification of these lesions. He oversees an ongoing research program concerning the biology and genetics of cavernous malformations. A major focus of this research has been to understand the progression and genesis of these lesions. Joseph Zabramski, MD, will review the advances in genetics and natural history of cavernous malformations, including the familial "hereditary" form of this disease. At last year's CNS meeting in Chicago, Dr. Zabramski announced the successful localization of the gene responsible for cavernous malformations to the long arm of Chromosome 7. This finding has since been confirmed by other investigators. Case presentations and an open forum with the speakers will conclude this invited portion of the program.

In addition to the update on cavernous malformations, the scientific program will include the presentation of 10 outstanding papers in the area of cerebrovascular research. Clinical and laboratory research projects are evenly represented and should make for an interesting session.

The Joint Section Programs are open to all meeting registrants. Why not make plans to join us on Tuesday afternoon, October 17.

Submitted by:
Joseph Zabramski, MD
Chairman, JSCVS Scientific Program Committee
Barrow Neurological Institute
2910 North Third Avenue
Phoenix, AZ 85013

Meeting Announcement and Call for Abstracts

Joint Section on Cerebrovascular Surgery
FIRST ANNUAL MEETING AND SCIENTIFIC PROGRAM
Jointly Sponsored by The American Association of Neurological Surgeons

San Antonio, Texas; January 23–25, 1996
MARRIOTT RIVER CENTER

Features a Comprehensive Program Dedicated to Scientific Advances,
Professional Issues and Challenges Unique to Cerebrovascular Surgery

Open Presentations, Posters, and Invited Lectures by Leading Faculty

Meeting preceding and coordinated with the International Conference on Stroke
and Cerebral Circulation of the American Heart Association.

Individual Sessions will include:
Global Issues Subarachnoid Hemorrhage Intracranial Aneurysm Vascular Malformations
Brain Ischemia & Carotid Surgery Focused Luncheon Discussion Groups

ABSTRACT DEADLINE SEPTEMBER 15, 1995

Contact the AANS meetings office to request additional abstract forms by phone at 708/692-9500 or by fax at 708/692-2589.

For additional information contact Issam A. Awad, MD, Chairman of the Organizing Committee, Yale University Medical School, 333 Cedar Street, TMP 405, New Haven, CT 06520 or FAX 203/785-6916. Electronic Mail "Issam-Awad@QM.Yale.Edu"

Carotid Endarterectomy Task Force

Marc Mayberg, MD

The Carotid Endarterectomy Task Force was commissioned by the Joint Officers of the Congress of Neurological Surgeons and The American Association of Neurological Surgeons to promote the education of neurosurgeons and non-neurosurgeons regarding carotid endarterectomies. The original committee was chaired by Robert Spetzler, MD, and developed a series of recommendations to accomplish this task. These recommendations have been applied by the current task force, which is chaired by Marc Mayberg, MD, and Robert Ojemann, MD. The projects of the Carotid Endarterectomy Task Force are being coordinated through the Executive Committee of the Joint Section on Cerebrovascular Surgery.

The Residency Review Committee is currently considering changing requirements for carotid endarterectomy as a part of neurosurgical training programs. In conjunction, Chris Loftus, MD, is currently establishing a database to determine the current status of carotid endarterectomy in American training programs and determining the specific operational problems which limit the performance of endarterectomy by neurosurgeons in training. Secondly, an assessment of current reimbursement patterns for carotid endarterectomy and distribution among different surgical subspecialties is being derived from Medicare records.

A number of programs are in progress related to education for neurosurgeons regarding carotid endarterectomy. Issam Awad, MD, is establishing a listing of possible fellowships in carotid endarterectomy which could supplement neurosurgical training. He is also developing a listing of current clinical trials related to stroke and endarterectomy, which will be disseminated to all neurosurgeons. The CV Section is developing a new set of training standards in carotid endarterectomy under the direction of L. Nick Hopkins, MD. Several members of the Joint Section on Cerebrovascular Surgery will hold a session on carotid endarterectomy in San Antonio, Texas. Several new Practical Courses are being developed relating to carotid endarterectomy. Chris Wallace, MD, and Robert Smith, MD, have been instrumental in updating and reformatting the Practical Courses given at the CNS and AANS national meetings. In addition, Julian Bailes, MD, and Richard Harbaugh, MD, are developing hands-on refresher courses in carotid endarterectomy, which will be initiated this fall.

Several types of materials are being developed for distribution to neurosurgeons for use in community education. A Stroke Center Development package is being put together by Warren Selman, MD, and Robert Harbaugh, MD, which uses existing successful stroke center models to help neurosurgeons establish and promote stroke centers within their own community. A brochure was recently developed by Dr. Selman, which neurosurgeons can use to contact local physicians. It contains the results of the most recent clinical trials on endarterectomy and is available at nominal cost from the AANS National Office. Similarly, Dr. Selman and Kevin McGrail, MD, are developing a slide program for neuro-

surgeons to use in community grand rounds which describes the rationale and the techniques of endarterectomy. Richard Roski, MD, and Dr. Harbaugh are developing a Practice Management package which will help neurosurgeons negotiate with managed care to perform carotid endarterectomy. Robert J. Dempsey, MD, is overseeing a series of initiatives to involve neurosurgeons in developing and becoming active members of non-invasive screening laboratories.

The Joint Section on Cerebrovascular Surgery welcomes any additional help, ideas, or other assistance in this program. If you are interested, please contact Marc Mayberg, MD, at the University of Washington, Department of Neurosurgery/RI-20, Seattle, WA, 98195.

Images of the 1995 Joint Section Program at the AANS Meeting in Orlando



Charles B. Wilson, MD, giving the RMP Donaghy lectureship in cerebrovascular surgery in Orlando, Florida. Dr. Wilson discussed dural arterial venous fistulas: pathogenesis progression and principles of management.

Arthur L. Day, MD, discussing the surgical aspects of unruptured aneurysms during a special symposium at the Joint Section on Cerebrovascular Surgery in Orlando, Florida.



Allan H. Friedman, MD, discussed familial aneurysms at the Special Symposium on Cerebrovascular Surgery in Orlando, Florida.

Membership in the Joint Section

Issam A. Awad, MD

The membership drive is currently in its second year, having succeeded at increasing Joint Section membership by 25% in all categories. A particular effort was undertaken to ensure that all neurosurgeons with special interest and expertise in cerebrovascular surgery were aware of our Section, its mission, and the benefits of membership. We have also reached out to colleagues in vascular neurology and in interventional neuroradiology. There is currently representation from these groups on the Executive Council of the Joint Section on Cerebrovascular Surgery, and a broad inter-society liaison community tackling professional and scientific issues crossing specialty lines.

Membership categories include Active, which is offered to neurosurgeons who are members of the AANS or CNS and who have demonstrated through their training, practice or academic work a special interest and/or expertise in cerebrovascular surgery. Candidate membership is offered to resident members of either the AANS or CNS, and to those with candidate membership in either organization. Adjunct Associate membership is open to non-neurosurgeon colleagues with interest in cerebrovascular disease and who work closely with cerebrovascular surgeons, including neurologists, interventional neuroradiologists and basic scientists.

The Membership Committee includes Issam Award, MD, (Membership Chairman), Christopher Oglivly, MD, Gary

Steinberg, MD, Daniele Rigamonti, MD, and Neil Martin, MD. Each may be contacted for membership forms and information. Final processing of all applications is performed through the office of the Membership Chairman, which may be contacted at: phone 203/737-2096 or fax 203/785-6916.

The Joint Section on Cerebrovascular Surgery is dedicated to promoting and ensuring the advancement of knowledge in the field of cerebrovascular surgery. It is the sole professional organization dedicated to this field of neurological surgery, and to the promotion of ideas, interests and information relevant to neurosurgeons engaged in this area. The Joint Section serves as an organized body, representing this field and advising the Board of Directors of the AANS and the Executive Committee of the CNS on activities, opportunities, problems and challenges. Membership in the Joint Section allows active participation in the scientific and profession forces shaping this subspecialty, and pro-active involvement in the response to ongoing challenges. Members participate in a number of scientific and CME efforts, and in numerous special projects and task forces undertaken by the Joint Section. The newsletter provides an open forum and an informational medium for all members. Neurological surgery needs the active involvement and leadership of all surgeons with interest in cerebrovascular surgery, and we call upon all of you to enhance membership in our Joint Section.

MEMBERSHIP REPORT 4/25/95 Nominations of New Members

John A. Anson / Active
John L. Atkinson / Active
Bikash Bose / Active
Alfred P. Bowles / Active
Thomas Brott / Active
David A. Cavanaugh / Active
Jefferson W. Chen / Candidate
Austin R. T. Colohan / Active
Terence Coyne / Adjunct Associate
Frank Culicchia / Active
Christopher F. Dowd / Adjunct Associate
Allan H. Friedman / Active
Glen Geremia / Adjunct Associate
James Grotta / Adjunct Associate
Guido Guglielmi / Adjunct Associate
Jens Haase / Active
Kimberly Harbaugh / Candidate

David C. Hunt / Active
Walter Johnson / Active
Imad Kanaan / Active
Wesley King / Active
Lee Krauth / Active
Donald W. Larsen / Adjunct Associate
Adam I. Lewis / Candidate
Kimberly Livingston / Candidate
Peter L. Mayer / Active
Kenneth I. Maynard / Adjunct Associate
Cameron G. McDougall / Active
Donald Philip Megison / Active
Michael G. Nosko / Active
Wayne Settle Paullus, Jr. / Active
Troy Payner / Active
Gary John Redekop / Active

Michael T. Richard / Active
Duke Samson / Active
John H. Schmidt, III / Active
John A. Scott / Adjunct Associate
Scott Shapiro / Active
Peter M. Shedden / Active
Sigurdur A. Stephenson / Active
George P. Teitelbaum / Adjunct Associate
Jeffrey E. Thomas / Active
Kevin Tracey / Active
Marc Vanefsky / Candidate
Shiro Wago / Active
Clarence B. Watridge / Active
David E. Zinke / Active
Mario Zuccarello / Active



Joint Section on Cerebrovascular Surgery of the AANS and CNS



Application for Membership

A. Biographical Material

Name: _____
 Birth Place: _____ Birth Date: _____
 Home Address: _____ Office Address: _____
 Fax: _____ Phone: _____ Fax: _____ Phone: _____

B. Memberships and Certificates

Date of Completion of Formal Neurosurgical Training _____ / _____ / _____
 Date of American Board of Neurological Surgery Certification _____ / _____ / _____
 Date of Fellowship in Royal College of Surgeons (Neurosurgery) of Canada _____ / _____ / _____
 Are you a member of:
 The American Association of Neurological Surgeons? Yes ___ No ___
 Congress of Neurological Surgeons? Yes ___ No ___
 American Medical Association? Yes ___ No ___
 Stroke Council of the American Heart Association? Yes ___ No ___

C. References

Please provide letters of reference from two members of the Joint Section on Cerebrovascular Surgery highlighting your activity/involvement in cerebrovascular surgery. Indicate below (name and address) from those whom these references will be received:

1) _____
 2) _____

D. Curriculum Vitae

Please enclose a current Curriculum Vitae with your completed application.

E. Describe your current interest and activities in cerebrovascular surgery (unless clearly evident in your Curriculum Vitae).

F. Please enclose a check in the amount of \$50.00, made payable to The Joint Section on Cerebrovascular Surgery of the AANS/CNS.

G. As soon as all required materials are received, your application will be reviewed by the Membership Committee, and submitted to the Executive Committee for consideration and approval before final voting/approval by members of the Joint Section.

H. Completed application, Curriculum Vitae, letters of reference, and application fee should be mailed directly to:

Issam A. Awad, MD, MSc, FACS
 Membership Chairman
 Joint Section on Cerebrovascular Surgery
 Yale University School of Medicine
 Section of Neurological Surgery
 333 Cedar Street, TMP 405
 New Haven, CT 06510

Phone: (203) 737-2096
 Fax: (203) 785-6916

 Signature of Applicant

Secretary's Corner

Christopher M. Loftus, MD – Secretary/Treasurer

The Joint Section, under the stewardship of L. Nick Hopkins, MD, has remained very active at the forefront of several major issues affecting the cerebrovascular neurosurgery.

First, we should mention the satellite meeting planned to precede the American Heart Association Stroke Council Meeting in San Antonio in January of 1996. Dr. Awad has done a terrific job of organizing a scientific program for the first dedicated cerebrovascular meeting. The members of the Executive Council are excited about this new effort and hope our membership will support us in making this a success.

Next, the Joint Section remains active in cerebrovascular research and we continue to oversee both the Miles Fellowships and the Upjohn Resident Research Grants on an annual basis. In the furtherance of cerebrovascular educational programs, the Joint Section on Cerebrovascular Surgery (JSCVS) is active in establishing a uniform format for carotid endarterectomy practical hands-on courses under the stewardship of Julian Bailes, MD. Warren Selman, MD, is in the process of organizing a slide set and other presentation materials regarding carotid endarterectomy for distribution to practicing neurosurgeons for use in making presentations in the community. He is also involved in preparing articles on carotid artery surgery for the *American Family Physician*. The Joint Section Executive Council is extremely interested in aiding and promoting the performance of carotid endarterectomy by neurological surgeons in any fashion possible. The Task Force II on carotid endarterectomy, chaired by Mark Mayberg, MD, and Robert Ojemann, MD, is another major effort in this direction.

The JSCVS remains active in the political socioeconomic areas that would affect our membership. Through the liaison provided by Dr. Hopkins, training standards have been developed with JSCVS input for radiology/neurosurgery endovascular training programs. The Joint Section is involved in overseeing the PORT carotid study and the registry of GDC coils as it developed and the membership can be assured that the Joint Section is very proactive in promoting the interests of cerebrovascular neurosurgeons wherever interventional techniques are being developed, including close scrutiny of the potential carotid artery angioplasty trials.

The Joint Section has and will continue to sponsor the annual Donaghy and Galbraith Lectures and to make efforts to fund a long-term endowment for those educational programs. The financial status of the Joint Section is sound and becomes continually more so through the diligent efforts of Dr. Awad and his committee in increasing JSCVS membership. All current members are reminded to please invite any neurosurgeon with a cerebrovascular interest to consider the very reasonable annual dues and the very tangible benefits in terms of education and political support that membership in the JSCVS will convey.

Finally, we should note the appointment of a number of new ex-office members of the Executive Council. They are Drs. Bailes, Brott, Harbaugh, and Rosenwasser. Daniel Barrow, MD, has also been elected to a three-year term as a member-at-large of the Executive Council.

BRAIN ATTACK

Warren Selman, MD

Roberto Heros, MD, has spearheaded the development of a unique coalition of agencies dealing with prevention and treatment of stroke. There is an increasing awareness that cerebral infarction should be treated as a medical emergency with the same degree of urgency as myocardial infarction. In light of this, the term "brain attack" is being used to indicate the need for emergency treatment of stroke.

The Brain Attack Coalition is the largest coordinated effort of its kind, and is the first-ever multispecialty (neurological surgeons, neuroradiologists, neurologists, and emergency physicians) collaboration in stroke. The Carotid Endarterectomy Task Force, co-chaired by Drs. Robert Ojemann and Marc Mayberg, in conjunction with the Joint Section on Cerebrovascular Surgery, has produced a brochure highlighting new developments in the diagnosis of carotid stenosis and the role of surgery in the management of this disease for distribution to neurosurgeons who would ultimately provide them to primary care physicians in their community.

A slide presentation and syllabus highlighting the role of carotid endarterectomy and other neurosurgical procedures in the prevention and treatment of brain attacks is available through the AANS office for use by neurosurgeons to present continuing education lectures to primary care physicians and other health care professionals in their areas. These materials will allow neurosurgeons to position themselves in the community as leaders in the operative treatment of occlusive and hemorrhagic cerebrovascular disorders.

A committee of the Joint Section of Cerebrovascular Surgery is available for consultation in the development and promotion of a Cerebrovascular Center for any neurosurgeons interested in increasing their role in the management and treatment of cerebrovascular disease. Information on how to obtain any of these materials or consultations can be obtained through the office of the secretary of the Joint Section on Cerebrovascular Surgery, Christopher Loftus, MD.

“Asymptomatic Carotid Artery Stenosis – Indications for Surgery”

Christopher M. Loftus, MD, FACS – Secretary/Treasurer, AANS/CNS
Joint Section on Cerebrovascular Surgery

There has long been controversy concerning the propriety of surgery for asymptomatic carotid artery stenosis, whether discovered screened previously, or in patients undergoing other forms of surgery, or in patients with a contra lateral symptomatic carotid plaque. In my own practice, asymptomatic patients were not operated upon, no matter how great the degree of stenosis, as I was convinced that the literature did not demonstrate any demonstrable risk reduction over the natural history of the disease. This policy included even patients with high-grade (>80%) stenosis who would have been considered surgical candidates by many of my colleagues. As is well known to most cerebrovascular neurosurgeons, the past decade saw the development of several large cooperative trials which were organized with the aim of answering this surgical question. Prospective, randomized trials comparing medical and surgical therapies in patients with asymptomatic internal carotid artery stenosis included the Carotid Artery Stenosis with Asymptotic Narrowing Operation Versus Aspirin (CASANOVA) study, the Mayo Asymptomatic Endarterectomy Trial (MACE), the Veterans Administration Cooperative Trial on Asymptomatic Carotid Stenosis, and the Asymptomatic Carotid Atherosclerosis Study (ACAS). As of the writing (July 1995), data are available from all of these studies. The ACST trial in Great Britain continues to enter asymptomatic patients at the present; no results are available or foreseen in the near future.

Unlike the symptomatic trials (NASCET, ECST, and VA CSP 309) where all three cooperative trials came to essentially the same conclusion (that surgery was justified for stenosis >70%), the asymptomatic trials have disagreed. The first of these trials to be completed was the German CASANOVA study of 410 patients. This trial did not show any surgical benefit in reducing morbidity and mortality for patients with asymptomatic internal carotid artery stenosis of <90%. Medical treatment in this study consisted of aspirin and dipyridamole. No recommendations were made for patients with higher (>90%) grades of stenosis, since such patients, unfortunately, were excluded from this trial (1). The MACE study, which was published in 1992, was interrupted after only 71 patients had been randomized because an excess of patients in the surgical group suffered myocardial infarction (2). No surgical benefit could be demonstrated in this small study. If anything, findings from this trial pointed to the benefit of prophylactic aspirin in preventing myocardial infarction in patients having carotid endarterectomy. The VA CSP 167 trial randomized 444 male patients in 1987. Patients in the medical arm of this study received 325 mg of aspirin twice daily. Findings from this trial showed that carotid endarterectomy reduced the overall incidence of ipsilateral neurologic events (TIA's included) for patients with asymptomatic internal carotid artery stenosis of 50% or more. However, this trial found

no significant effect from carotid endarterectomy on the combined incidence of stroke and death, and thus no surgical benefit was conferred for these endpoints (3). Whereas some argued that the VA trial provided justification for surgery on asymptomatic lesions, many others felt that the demonstrated reduction of only TIA's, without an impact on stroke or death was not sufficient justification for prophylactic endarterectomy, since the onset of TIA's in previously asymptomatic patients would customarily trigger carotid reconstruction, especially in patients with high-grade stenosis.

The largest of these asymptomatic trials, ACAS, as mentioned above, reached a stopping rule on September 16, 1994, and the data was released to the co-investigators. It has now been published as well (4). One thousand six hundred sixty two patients were entered in the ACAS trial at 39 centers. All patients had greater than or equal to 60% stenosis of the carotid artery and were randomized into either a medical arm receiving 325 mg of aspirin daily or an aspirin plus surgery arm. The primary endpoints in the ACAS study were stroke or death during the 30-day perioperative period and stroke ipsilateral to the carotid under study thereafter. The ACAS data showed an aggregate risk for the primary outcome of 4.8% in patients assigned to surgical therapy versus 10% in patients assigned to surgical therapy versus 10.6% for patients who were treated medically. Carotid endarterectomy was found to be beneficial with a statistically significant absolute risk reduction of 5.8% and a relative risk reduction of 55% in the risk of the primary end point of stroke within five years. The benefit was much greater in men, with a 69% relative risk reduction of primary endpoint, while women enjoyed a 16% relative risk reduction. The success of the operation was dependent on medical centers and surgeons with a documented perioperative morbidity and mortality of less than 3%. In my opinion, the plethora of conflicting historical studies, and even the discordant results of the smaller randomized trials are overshadowed by the definitive results of ACAS, a beautifully designed and scrupulously documented cooperative trial.

It will be recalled that the three symptomatic trials were generally in concurrence. A European trial of symptomatic patients in all subgroups from 0-99% stenosis was paralleled by two trials in North America, the North American Symptomatic Carotid Endarterectomy Trial (NASCET) and the VA Clinical Studies Program 309. On February 22, 1991, the entry of patients with greater than or equal to 70% stenosis into the NASCET trial was stopped because an end point was reached in which it was clearly demonstrated that surgical treatment of these patients was superior to medical management (5). The NASCET trial has continued to enter, randomize, and follow up patients identified to have 30-69% stenosis who are clinically symptomatic.

continued on next page

Concurrent with release of data from the NASCET trial, a similar release by the European group (coincidentally during the same week) reported that a clear surgical benefit was found in patients with 70-99% stenosis in that trial as well (6). At the same time these investigators declared that medical therapy was clearly superior for symptomatic patients with stenosis less than 30% (a group not studied by NASCET). The European trial has also continued to enter patients with between 30% and 70% stenosis with the feeling that the treatment of choice for this subgroup has not yet been identified. Following these clinical alerts from NASCET and ECST, VA CSP 309 was stopped and the data was analyzed. VA CSP 309 demonstrated a statistically significant surgical benefit for symptomatic patients with greater than 50% stenosis, thus corroborating the NASCET and ECST data (7). Because of the smaller size of VA CSP 309, most cerebrovascular specialists have chosen to adhere to >70% stenosis as the guideline for surgical benefit, at least until NASCET and ECST are complete.

As pointed out by Dr. Hopkins and myself in a recent editorial in Neurosurgery (8), the overlapping data from the various trials have problematic implications. The cerebrovascular clinician faces some uncertainties regarding the wisdom of recommending surgical reconstruction for symptomatic patients with stenosis of 60-69%, a group for which the largest trial (NASCET) can demonstrate no surgical benefit, yet a group in which asymptomatic patients, again according to the largest trial (ACAS), benefit significantly from carotid endarterectomy. In point of fact, the medical arm patients from ACAS have even re-contacted in all centers and scheduled for surgery based on the trial results. Following release of the ACAS results, in an attempt to resolve this question, the NAASCET and ECST "high moderate" subgroups were analyzed but at present, according to the latest releases from Drs. Barnett and Warlow, a surgical benefit cannot be shown in either study. This inability to resolve the high moderate question at present creates some difficult clinical problems. What, for example, should be proposed for a patient with a 60% symptomatic carotid stenosis (who is eligible for NASCET randomization), who is found to have contra lateral 60% asymptotic stenosis (which by current data should be reconstructed)? What policy should be adopted for these asymptomatic patients with 60-70% stenosis enrolled in the medical arm of NASCET, who on learning of the ACAS data, request that surgery be performed, thereby triggering the always problematic "crossovers" and further reducing the chances of obtaining a definitive result for the "high moderate" symptomatic category? And what should be done for recurrent carotid stenosis, with its higher surgical risk? No asymptomatic study has addressed this question. Should these patients be screened and operated prophylactically if they reach 60% stenosis again, or should they be followed until symptomatic, as I have always previously done?

I have adopted the policy at present, although it seems a bit artificial, to treat asymptomatic and symptomatic carotid stenosis as two separate diseases for now, and to follow exactly the co-

operative trial data for each group. That is, I am recommending carotid endarterectomy for all asymptomatic patients >60% and all symptomatic patients >70% stenotic. I see no realistic alternative if the cooperative trials are to achieve definitive and permanent answers. Patients with 30-69% symptomatic stenosis will be encouraged to participate in the randomized trials, but those who decline (at least those with greater than 50-60% stenosis) will probably undergo surgery. If and when the steering committees for NASCET and/or ECST determine that in light of the ACAS data it is no longer ethical to randomize "high moderate" (60-69%) patients (there is no hint that this will happen soon), I will extrapolate the asymptotic results to include such symptomatic patients as well, and will most likely recommend surgery for all patients >60% stenotic at that time, no matter what their mode of presentation. I have not been faced with the recurrent carotid stenosis question, but doubt very much whether I will assume the surgical risk of the reoperation in an asymptomatic patient.

References:

1. CASANOVA Study Group: Carotid surgery versus medical therapy in asymptomatic carotid stenosis. *Stroke* 22:1229-1235, 1991
2. May Asymptomatic Carotid Endarterectomy Study Group: Results of a randomized controlled trial of carotid endarterectomy for asymptomatic carotid stenosis. *Mayo Clin Proc* 67:513-518, 1992
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RESEARCH REPORT

Robert J. Dempsey, MD

The Research Committee of the combined Committee on Education of the AANS and CNS is particularly interested in stimulating cerebrovascular research. The committee has taken a broad approach to the issue of limited research by neurosurgeons, especially in times of uncertain clinical reimbursements. Several approaches have been suggested. The committee has approached the National Institute of Health (NIH) with the idea of expanding the clinical activity allowable within the guidelines that define the Clinical Investigator Development Award (CIDA). It is felt that, at the conclusion of extensive neurosurgical training, it is very difficult for a fully trained neurosurgeon to limit his or her clinical time severely, as traditionally required by the CIDA. A 50/50 split between research and clinical activity is proposed. This would allow the establishment of a basic clinical practice that would also support divisional/departmental funding and still allow 50% effort in research over the several years of the award. Such a period of time could be utilized for bench research focusing on cerebral ischemia and atherogenesis, or in clinical research for evolving issues such as endovascular treatment and thrombolysis. In addition, the committee hopes to encourage the formation on increased small grant awards to maintain research opportunities and the publication of fellowship opportunities in cerebrovascular research. The committee is particularly interested in input from members of the cerebrovascular section regarding suggestions to enhance research experience. Suggestions should be routed to the subcommittee chairman, Robert Dempsey, MD, Division of Neurosurgery, University of Kentucky Medical School, Lexington, Kentucky.

A listing of major sources of funding for stroke-related projects, along with a brief description of each funding agency's particular grant awards, how to receive grant applications, and deadline dates for submission is included.

1. U.S. Department of Health and Human Services, Publish Health Services (PHS), National Institutes of Health (NIH), National Institute of Neurological Disorders and Stroke (NINDS): With few exceptions, investigators should use Form PHS 398 for all new, competing continuation, supplemental research, research training grant, and

cooperative agreement support applications. There are several different types of grant programs sponsored by the NIH including the popular "R01," or Regular (Individual Investigator) Research Grant. Please contact NINDS at 301/496-9248 for more information.

2. American Heart Association (AHA): Contact the AHA's Division of Research Administration by phone at 214/706-1453, or by fax at 214/706-1341, regarding the various national research awards offered by the agency. Typically, the agency sponsors awards for both beginning, intermediate-level, and seasoned investigators, as well as minority students and medical students interested in pursuing careers in cardiovascular and/or stroke research. Also, most states have an affiliate AHA office that typically offers some of the same awards as the national agency, yet at a reduced funding level.
3. National Science Foundation (NSF): To obtain the NSF Grant Proposal Guide (Document 94-2), which contains the Proposal Forms Kit (Document NSF 94-3), please write to: NSF, Forms and Publications Unit, 4201 Wilson Boulevard, Room P15, Arlington, VA 22230. Phone: 703/3061130; Bitnet: pubs@nsf; Internet: pubs@nsf.gov
4. The American Association of Neurological Surgery (AANS): Contact Ms. Chris Philips by phone at 708/692-9500. The AANS offers a Research Fellowship, for neurosurgical residents just beginning their research careers, for 2 years at a maximum of \$35,000 a year; a Young Clinical Investigator Award, designed as "bridge" funding for intermediate-level investigators who are ready to submit their first major, independent grant; and the W.P. Van Wagenen Senior Neurosurgeon Resident Award, given to neurosurgical residents to travel outside North America for a minimum of 6 months at \$20,000. The address of the AANS is 22 South Washington Street, Park Ridge, IL 60068-4287.

Typically, institutions have a research office that provides grant application packets and basic grant-related information, and assists investigators with their submissions. You should contact that office at your institution.

ACADEMIC NEUROSURGEON

The Department of Neurosurgery at the University of Mississippi Medical Center in Jackson is seeking full-time faculty members with special interest in cerebrovascular surgery.

Candidates must be board eligible/certified. The positions involve teaching, research, and clinical practice. The academic rank and salary will be commensurate with training and expertise.

Send your inquiries to: Andrew D. Parent, MD, Professor and Chairman, Department of Neurosurgery, The University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216.

The University of Mississippi Medical Center is an Equal Opportunity Employer. M/F/D/V

Course Schedule

August–December 1995

'95 Reimbursement Update for Neurosurgeons

Philadelphia, PA • September 15–17
Chicago, IL • November 17–19

Take control of your reimbursements! This course will help you understand current 1995 Medicare rules, provide updates of multiple procedure payments, and describe the appropriate appeals process for Medicare and commercial carriers. You will also learn how to properly bill for skull base surgery in association with other surgical specialists and to use appropriate documentation and modifiers.

Neurosurgical Office Management and Practice Development Strategies

Arlington, VA • August 26–27

Prepare for the challenges and choices of the '90s by ensuring that the administrative side of your practice is as current as the clinical. Here are just some of the topics that will be covered in this course:

- Receivables management
- Mergers and governance options
- Financial management systems
- Staff Motivation and performance reviews.

This is an interactive program that provides numerous opportunities to share ideas with your colleagues.

Managed Care for Neurosurgeons

Boston, MA • November 11

Managed care will affect you and you must be prepared when it does! This course provides vital information you need to prosper in the present health care environment by addressing managed care issues as they relate to your practice. The time to "wait and see" has passed. Become aware and informed, now!

'95 Advanced Thoracic and Lumbar Spine Management Hands-On

Chicago, IL • September 15–17

You will be engaged in a series of cases which cover a variety of thoracic and lumbar spine topics. Emphasis is placed on the anatomical, biomechanical and clinical considerations, including operative indications and surgical algorithms of each. Expert faculty facilitate discussions and lead you through extensive hands-on instruction utilizing human cadavers.



Stereotactic Neurosurgery Hands-On

New Orleans, LA • November 17–18

The field of stereotactic neurosurgery has advanced rapidly since surgical targeting techniques have merged with CT and MR scanning procedures. This course addresses procedures which can be readily added to the general practice of neurosurgery and the use of more sophisticated techniques that require specialized resources. The breakout sessions allow time for hands-on experience utilizing various types of apparatus available from several manufacturers.

Minimally Invasive Neurosurgery: Neuroendoscopy Hands-On

Cleveland, OH • November 10–11

Hands-on instruction will be provided in a variety of exercises using the latest available instruments. You will gain expertise in setting up the equipment and performing a series of orientation and dissection exercises. The course provides an in-depth overview of current indications for neuroendoscopy, as well as surgical pitfalls to be avoided.

The American Association of Neurological Surgeons is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

The American Association of Neurological Surgeons designates these continuing medical education activities for the designated hours in Category 1 of the Physician's Recognition Award of the American Medical Association.

Education Is the Key to Your Success!

To register for an AANS course, call the PDP Department at (708) 692-9500 and ask for Kim Scharoff or Liz Tomczyk.

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