

Pain NEWS



American
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Surgeons



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A A N S / C N S Section on Pain
www.neurosurgery.org/pain/index.html

Editor:

Kim J. Burchiel, M.D., F.A.C.S.

Assistant Editor:

Shirley McCartney, Ph.D.

Message from Chairman



Jaimie Henderson, M.D.

As we enter 2002, the Joint Section on Pain stands at a crossroads. Our membership has decreased from 276 members in 2000 to 248 members in 2001. We watch as pain management moves away from neurosurgery and into the domains of other medical specialties such as anesthesiology, neurology, and physical medicine & rehabilitation. Do these trends portend a waning of interest in neurosurgical pain management? As chairman of the Section, I firmly believe that advanced pain treatment belongs in the hands of neurosurgeons. Although we should seek to collaborate with other disciplines in the management of complex pain patients, we remain the only specialty which can claim not only thorough understanding of the pathways and mechanisms of pain, but also the technical skill to perform the entire spectrum of augmentative and ablative procedures. We cannot allow our leadership in this area to erode. Your section leadership is working hard on a number of fronts to assure that neurosurgical pain management continues to

not only survive, but to thrive.

One potential deterrent to the performance of pain procedures is their generally low level of reimbursement as compared to the amount of work required. The added difficulty of these procedures, coupled with the difficulty in managing this patient population, discourages many neurosurgeons from embracing surgical pain treatment. With proper valuation, more neurosurgeons might be willing to either add pain procedures to their armamentarium or continue to perform procedures which they may have been tempted to abandon. We are hard at work with members of the Coding and Reimbursement committee to attempt a review of many of these undervalued codes. Despite the fact that we are currently between Medicare review cycles, we are hopeful that exceptions will be made to allow some codes to be re-examined. We will keep the membership informed of progress in this important area.

The Pain Section is continuing its efforts to assist its membership not only in improving reimbursement, but also addressing injustices in the payment system. A neurosurgeon was recently audited by his Medicare carrier for alleged improper coding practices related to the treatment of trigeminal neuralgia. In collaboration with the Coding and Reimbursement Committee and the Washington Committee, the Pain Section joined the effort to issue a position statement on the proper use of the CPT code in question. The neurosurgeon appealed the decision and was fully vindicated, receiving a full refund of the \$27,000 he was forced to pay pending his appeal. We are proud to have participated in helping this neurosurgeon fight an unjust accusation, and we stand ready to help other members of our section as the need arises.

Building interest in neurosurgical pain management is a top priority of the Pain Section. To encourage residents, fellows, and young neurosurgeons to pursue an interest in pain, the Section offers two young investigator awards yearly: the Tasker award (presented at the Annual Meeting of the CNS) and the Sweet Award (presented at the Annual Meeting of the AANS). These prestigious awards have helped guide many members of our section into their eventual areas of interest. In addition, the Pain Section has developed a Young Investigator Fellowship supported by the Neurosurgery Research and Education and Foundation (NREF) and Medtronic, Inc., which provides a \$25,000 stipend over one year to support advanced research

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Membership Application

Psychological Considerations in Chronic Pain

Joel L. Seres, M.D., Portland, OR

Far too frequently patients in chronic pain don't obtain the expected goals after pain relieving operations.¹ Chronic pain patients who do not do well after neuroaugmentative surgery impeach the validity of our preoperative screening. Often, poor results are explained euphemistically as being due to "psychosocial factors." Since these are out of the control of the usual neurosurgeon the responsibility for them is by default delegated to others. What is clear is that "standard psychometric tests used as preoperative screening...fail to predict outcomes" in many groups of patients.³ Because of this, other attempts to predict outcomes are being sought.⁴

The development of the chronic pain syndrome in some patients suggests the presence of significant premorbid characteristics. However, just as the relationship between nociception and the development of suffering behaviors does not in these patients bear a linear cause-and-effect relationship there is also a poor correlation between the presence of psychosocial factors and poor outcomes. What is clear is that in those patients who tend to do poorly after pain surgery there is often present significant psychosocial factors that are explanatory. However, merely the presence of these factors does not necessarily predict a poor outcome. It is the influence of these factors in each patient's life that seems to be the determinant. If pre-screening is to have a predictive effect the question that must be addressed is to define the relationship between nefarious psychosocial factors and how they may be influencing the patient's clinical presentation. It is clear that finding "no psychological contraindications," by itself is not predictive.⁵

Job satisfaction is an important social factor that plays a major role in industrial claims.⁶ In addition, issues such as the worker's attitudes, cognitions and fear-avoidance beliefs are strongly related to the development of pain and disability.⁷ Passivity and catastrophizing cognitions are strongly related to pain and disability.⁷ In addition, patient beliefs about their impairment are important predictors of patient functioning.⁸

Attempts have been made by the psychiatric community to standardize their nomenclature. The unique nature of the "Chronic Pain Disorder" has been challenged by the documentation of similar features in such diagnoses as "Depressive Disorder," "Hypochondriasis" and "Somatiform Disorder."⁹ This suggests that in order to strengthen the psychiatric diagnosis of "Pain Disorder" it requires more consideration of psychosocial factors.

Anger, hostility¹⁰ and compensation issues¹¹ have been clearly identified as complicating factors affecting outcomes. Although most neurosurgeons cannot be expected to deal with these issues simply defining what the patient plans to do with the expected outcome can provide remarkable insights regarding probable problems. While many chronic pain patients indicate that return to work is their goal, outcome studies suggest that even with good pain improvement after pump surgery return to work often does not occur.¹² In order for a patient to justify not returning to work the effects of the residual pain are often impugned. Mental processes that use the residual pain to justify not working tend to exaggerate the amount of pain and thus its meaning to the patient. It is a simple matter for a neurosurgeon to ask for a detailed plan for work return if the proposed procedure is effective as part of the preoperative screening. If return to work is not the expected goal a similar plan of daily activity will serve a similar effect.

Since passive coping seems to characterize many chronic pain patients it is also a relatively simple approach to ask that the patient demonstrate some form of active participation as part of the preoperative planning. Such activities as job selection, exercising, weight reduction, activity monitoring and the like are easy requirements for further involvement in even a busy neurosurgeon's office. It is a simple matter to ask that the preoperative patient keep records of the requested functions and present them to the office staff at each visit. Active participation by some objective means may help to improve outcomes and to eliminate patients who are not likely to do well.

The major point in understanding the role of the psychologist or the psychiatrist is to incorporate their diagnosis into your surgical planning. It goes something like this: don't look for a new surgical treatment until you have documented that psychological issues were not the major cause for prior surgical failures. Preexisting psychological issues that have already impacted prior outcomes are quite likely to do it again. The question to ask the psychological consultant is whether or not there is evidence of previous treatment failures that were due to psychological issues. If they have been present it is important not to proceed until they have been successfully dealt with. This will provide the surgeon with much more information and the likelihood of better outcomes than asking simply whether or not there exist psychological contraindications.

The major point to remember is that if psychosocial issues are the defined cause for a prior surgical failure, that they were probably already present before that procedure and that the screening for that procedure had missed their importance. Don't compound the problem by missing it again.

References

1. Seres J.L. The fallacy of using 50% pain relief as the standard for satisfactory pain treatment outcome. *Pain Forum* 4:183-188, 1999.
2. Carragee E.J. Psychological screening in the surgical treatment of lumbar disc herniation. *Clin. J. Pain* 17:215-219, 2001.
3. Hurley D.A., Dusoir T.E., McDonough S.M., et al. How effective is the acute low back pain screening questionnaire for predicting 1-year follow-up in patients with low back pain? *Clin. J. Pain* 17:256-263, 2001.

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Young Investigator Award - Ronald R. Tasker 2001

Ronald R. Tasker Young Investigator Award

\$1,000 award sponsored by ANS, Inc. given for the best presentation by an investigator within 5 years of completion of residency training at the CNS Annual Meeting

Percutaneous Retrogasserian Glycerol Rhizotomy in the Management of Trigeminal Neuralgia Associated with Multiple Sclerosis

Gwynedd E. Pickett, M.D. and Gary G. Ferguson, M.D., F.R.C.S.C. (London, ON, Canada)

Introduction: Percutaneous retrogasserian glycerol rhizotomy (PRGR) is commonly used to treat trigeminal neuralgia (TN) in patients also suffering from multiple sclerosis (MS). Reports to date have not clearly demonstrated a link between postoperative facial sensory loss and long-term efficacy.

Methods: A retrospective chart review was performed in 31 patients with MS and TN treated with PRGR.

Results: Complete pain relief was obtained in 77.5% of patients following the initial procedure, and partial relief in a further 16.1%. Long-term follow-up (mean 60 months) demonstrated a recurrence rate of 83%, with a mean time to recurrence of 11 months (range 0.5 to 42). Twenty patients underwent a second or subsequent procedure for recurrent pain. A total of 67 rhizotomies was performed in the 31 patients; the percentages of patients obtaining complete (77.3%) and partial (18.2%) pain relief were similar when all procedures were analyzed. Time to recurrence increased following secondary procedures, to a mean of 22 months. Facial sensory loss was associated with longer time to recurrence, and with a decreased need for medical therapy post-rhizotomy. Patients who developed sensory loss were also less likely to require a second procedure. Deafferentation pain developed two years post-rhizotomy in a single patient who had previously undergone partial sensory root section; one patient developed V1 anaesthesia, with an absent corneal reflex, following a fourth PRGR.

Conclusions: We believe that PRGR is an effective, low-morbidity surgical treatment for TN complicating MS, and that the presence of facial sensory loss following rhizotomy augurs well for long-term efficacy.

Selected Abstracts

Annual CNS Meeting, San Diego 2001

Mathematical modeling of cost comparison between inpatient and outpatient spinal cord stimulation trials

Frank P. Hsu, M.D. Ph.D., Farhad Limonadi, M.D. (Portland, OR) Kim J. Burchiel, M.D. (Portland, OR)

Introduction: Spinal cord stimulation (SCS) is an established and cost-effective methodology for treating nonmalignant chronic pain. However, the technology is not inexpensive. Therefore, cost containment is an important issue.

Methods: We formulate a mathematical model comparing the cost between inpatient and outpatient trials before implantation. For the trial, percutaneous electrode is placed with an external wire. For outpatient trials the patient is discharged the same day and returns in seven days for assessment. For the inpatient trials the patient is admitted to the hospital and efficacy is determined over the next two days. A decision is made on whether the SCS should be implanted based on the trial outcome. While it may seem that outpatient trial is more cost-effective, since hospitalization charges are avoided in the process, factors such as increased rate of infection negatively impact the cost-effectiveness of conducting outpatient trials. The proposed mathematical model is based on the cost of the hospital fees (surgeon, operating

room, anesthesia, implant, hospitalization, treatment for infection, and medications) and the infection rate in each trial group. A retrospective analysis of 200 consecutive SCS trial and implants is analyzed. Inpatient (84) and outpatient (116) trials were performed from 1988 to 1994 and from 1994 to 2000, respectively.

Results: The following parameters are analyzed and reported between the two groups: demographics, success rates in trials, implantation rates, infection rates, failure rates, and removal rates. There were 6 (1.2%) and 6 (5.2%) infections and subsequent removal of the SCS for the inpatient and outpatient groups, respectively.

Conclusions: The model compares the cost ratio for the two groups as functions of infection rates. Based on using the retrospective data as the input for the model, it is suggested that inpatient trials may be the more cost-effective method.

Long Balloon Inflation Time of 20 Minutes Increases Remission Time in Percutaneous Balloon Rhizolysis for Trigeminal Neuralgia

Ayman A. Al-Banyan, M.D., Ross Mantle, M.D. and M.Sc., Brien G. Benoit, M.D., F.R.C.S.c, F.A.C.S., M.Sc. (Ottawa, ON)

Introduction: The purpose of this study was to review the short and long-term results of balloon rhizolysis in the treatment of trigeminal neuralgia; and determine factors which predict duration of remission from neuralgia after the procedure.

Methods: A retrospective review was conducted for the period 1990 to 2000 on 106 consecutive cases that underwent

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AANS/CNS Section on Pain Membership Information

Categories:

Active Members: Members shall be physicians who are members of The American Association of Neurological Surgeons and who are actively interested in the management of pain problems. Active members have the right to vote and hold office and shall pay dues.

Associate Members: Members shall include physicians not otherwise eligible for active membership, including neurosurgeons not members of The American Association of Neurological Surgeons, Ph.D.s, or holders of an equivalent degree in collateral or related fields, who are active in the areas of research or sections management of pain. No individual shall be elected to Associate Membership unless certification has been obtained in the field of primary activity, if such exists. These individuals may participate in any and all activities of this Section. They may not vote or hold office and shall not be required to pay dues. They may be active dues paying members of the International Association for the Study of Pain or any of its National or regional chapters.

Honorary Members: Honorary membership may be granted by the officers to such qualified physicians or scientist, who, in their opinion, merit such recognition. These members shall not be required to pay dues and shall not have the privilege of voting or holding positions on participating committees. They shall not be required to attend meetings.

International Members: Members shall reside beyond the limits of the United States of America and Canada. They shall be chosen because of their devotion and their contributions to the management of pain. They may serve as members of the committees, but they shall not be required to attend meetings nor pay dues. They may not vote or hold office. They need not be corresponding members of The American Association of Neurological Surgeons.

Yearly Dues: \$50.00 for Active members only

Application Fee: none

Guide to Web Pain Resources:

American Academy of Pain Management

www.aapainmanage.org/

American Academy of Pain Medicine

www.painmed.org/

American Association of Neurological Surgeons

www.neurosurgery.org/aans/index.html

American Board of Pain Medicine

www.abpm.org/

American Pain Foundation

www.painfoundation.org/

American Pain Society

www.ampainsoc.org/

AANS/CNS Pain section

www.neurosurgery.org/pain/index.html

International Association for the Study of Pain

www.iasp-pain.org/
www.painbooks.org/

JCAHO Pain Standards for 2001

www.jcaho.org/trkhco_frm.html

Medtronic Advanced Pain Therapies

www.medtronic.com/neuro/apt/

Trigeminal Neuralgia Association (TNA)

www.tna-support.org/



Colleagues:



An application, in Adobe Acrobat format, for membership in the Joint Section on Pain can be located at www.neurosurgery.org/pain/Painapp.PDF and on page 11 of this issue.

We encourage you to forward this application to colleagues with interests in pain management.

The goals of the Section are to assure the highest quality of medical care for the management of patients with pain problems and to assure an appropriate socioeconomic and political climate conducive to the effective and efficient delivery of medical care to patients with pain problems.



MEMBER NEWS WANTED !!!

AANS/CNS Pain Section wants to recognize the accomplishments of its members.

have you published a book?

have you been elected to a new position?

do you wish to recruit for practice positions?

have you been recognized by another organization or your community?

have you won an award?

Submit your information for the fall 2002 issue of the Joint Section on Pain Newsletter to Shirley McCartney, Ph.D., at mccartns@ohsu.edu

percutaneous balloon rhizolysis at the Ottawa Hospital and university of Ottawa. Another 25 cases were excluded because of incomplete documentation, or unsuccessful cannulation of the foramen ovale. Long term follow-up of up to 10 years was obtained. The procedure was performed using a number 3 or 4 Fogarty catheter inflated in the foramen ovale for 2 to 20 minutes. Variables studied preoperatively were: age, sex, side, number of involved divisions, size of catheter, duration of balloon inflation, previous procedures, and the presence of multiple sclerosis. Postoperative variables studied were: facial numbness, use of medications, and surgical complications.

Results: 83 percent of cases obtained immediate relief. For cases with recurrence of pain, the average time to recurrence was 23 months(\pm 20 SD). Average follow-up time for cases without recurrence was 28 months(\pm 12 SD). Duration of balloon inflation was the only preoperative variable predictive of recurrence-free time, ($P=0.02$, Cox multivariable time-dependant analysis, forward conditional). Duration of balloon inflation ($P=0.01$), size of catheter ($p<0.001$), and presence of multiple sclerosis ($P=0.01$) were all predictive of the duration of postoperative numbness. Other preoperative variables were not predictive of either recurrence-free time or postoperative numbness. 43 percent of cases in which balloon inflation times ranged from 2-17 minutes were recurrence-free over the follow-up period, while 60 percent with balloon inflation times of 20 minutes remained recurrence-free.

Conclusions: Long balloon inflation times of 20 minutes significantly improve the duration of remission in cases of trigeminal neuralgia, but also increase the duration of postoperative facial numbness, which is usually well tolerated.

Outcomes following Repeat Radiosurgery for Trigeminal Neuralgia

Toshinori Hasegarwa, M.D., Richard Spiro, M.D., John C. Flickinger, M.D., Douglas Kondziolka, M.D. and L. Dade Lunsford, M.D. (Pittsburgh, PA)

Introduction: Stereotactic radiosurgery has become an important treatment alternative for patients with trigeminal neuralgia. Results following a repeated procedure are unknown. We studied radiation parameters and determined results for pain relief and morbidity after repeat radiosurgery.

Methods: Thirty one patients had a second gamma knife radiosurgery after an initial procedure. Most patients had recurrent pain following an initial satisfactory result. Twenty-seven (27) patients were evaluable. Twenty-five (25) patients had undergone other prior surgeries (MVD, RF, glycerol rhizotomy). A single 4mm isocenter was targeted just anterior to the first radiosurgical target. The target doses of the first and second radiosurgeries varied from 60 to 80 Gy, and from 50 to 80 Gy, respectively. Median follow-up after the first and second procedures were 42.7 and 20.4 months. All patients were evaluated by a physician who did not participate in patient treatment.

Results: After the first radiosurgery, 15 patients responded with excellent control (complete relief without any medication), 5 with good control (complete relief with some medication), 7 with fair control (more than 50% partial relief), and 4

with poor control (less than 50% pain relief or treatment failure). After the second procedure, 5, 8, 10, and 4 patients were in each respective group. Eighty-seven point one percent (87.1%) of patients after the first radiosurgery achieved more than 50% pain relief, and 85.2% after the second radiosurgery. Two patients (6.7%) had new sensory symptoms after the first radiosurgery, and 4 (14.8%) after the second.

Conclusions: Repeat radiosurgery provided a similar rate of pain relief as the first procedure, despite a modest dose reduction. The risk of new sensory symptoms was increased, but no other morbidity was identified. Currently we use a maximum dose of 50-60 Gy at a second procedure.

Effects of closure techniques on post-operative headache from suboccipital craniectomy

Frank P. Hsu, M.D. Ph.D., Sean O. McMenemy, M.D. and Johnny B. Delashaw Jr., M.D. (Portland, OR)

Introduction: Postoperative headaches from suboccipital craniectomy are commonly reported in the literature (incidence 10-70%). The chronic headache starting immediately after surgery can be debilitating. Possible etiologies include neuroma or nerve entrapment at incision, bone dust irritation, or adhesion between scalp or nuchal musculature and dura. We examined whether closure techniques influence the incidence and severity of post-craniectomy headaches.

Methods: Retrospective review was performed on patients undergoing suboccipital craniectomy for resection of acoustic neuromas at the Oregon Health & Science University. The patients were divided into three groups according to the method of closures: (A) no cranioplasty, (B) titanium plate cranioplasty, and (C) Norian cranioplasty. Patients were excluded if they had cerebrospinal fluid leak, hydrocephalus, or shunt procedures. Headaches were quantitatively graded with grades: (0) no headache, (1) headache present but no medication needed, (2) headache controlled with over-the-counter medication, (3) headache controlled with prescription medication, (4) severe headache uncontrolled with medication.

Results: Ninety consecutive patients were identified from 1992 to 1999. Four patients were excluded and ten patients were lost to follow-up. Among the 76 patients, 38 patients had no cranioplasty (A), 18 patients had titanium plate crani-

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AANS On-line Marketplace
www.neurosurgery.org/marketpl/

The DREZ Operation

Regular List Price was \$95.00, List Price: \$40.00
edited by Blaine S. Nashold Jr.,
Robert D. Pearlstein Ph.D., Allan H. Friedman M.D.,
Janice Ovelmen-Levitt Ph.D.

Surgical Management of Low Back Pain

List Price: \$85.00 AANS Member Price: \$76.00
Editors: Daniel K. Resnick, M.D.
and Regis W. Haid, M.D.

plasty (B), and 20 patients had Norian cranioplasty (C). The incidence of headache in each group was (A) 45%, (B) 33%, and (C) 5%. In group (A) there were 35% grade 2, 35% grade 3, and 30% grade 4 headaches. In group (B) there were 33% grade 2, 50% grade 3, and 17% grade 4 headaches. For the patients with at least one year follow-up, duration of headache was characterized: 95% (3 months), 84% (6 months), 79% (12 months), 68% (greater than 12 months).

Conclusions: Titanium plate cranioplasty does not significantly reduce the incidence of headache following suboccipital craniectomy. Early results indicate that Norian calcium-phosphate cement cranioplasty does help prevent postoperative headache.

Inflammatory Mass Lesions Associated with Intrathecal Drug Infusion Catheters: Report and Observations on 41 Cases

Kim J. Burchiel, M.D. (Portland OR) and Robert J. Coffey, M.D. (Bronxville, NY)

Introduction: The authors examined previously unreported cases of inflammatory masses at the tip of intraspinal drug administration catheters.

Methods: The authors reviewed the literature, and data reported to the FDA to identify cases as of November 30, 2000.

Results: Between 1990-2000 the authors identified 41 cases: 16 from the literature, 25 previously unpublished. Mean duration of therapy was 24.5 months (range, 2 weeks - 91 months). Drugs included morphine alone, N=25; or mixed with other drugs, N=5. The morphine dosage was ≥ 10 mg/day, or at a concentration ≥ 25 mg/ml in 15 cases. Eleven patients received other drugs or mixtures, most commonly hydromorphone. Thirty patients had surgery to relieve spinal cord or cauda equina compression. The drug administration system was removed in a total of 22 cases. Eleven patients became non-ambulatory, one of whom died from a pulmonary embolus. Examination of 29 surgical specimens revealed chronic inflammation and/or fibrosis. Three cultures were positive for organisms believed to be contaminants.

Conclusions: Etiologic hypotheses have included drug related mechanisms, infection, pyrogens, silicone hypersensitivity, and surgical trauma. Positive cultures have been rare, making chronic infection unlikely. The patients' histories have been inconsistent with an endotoxin or pyrogen insult. Silicone allergy also is unlikely, given masses exclusively at the tips of infusion catheters, and their absence on silicone lumbar shunts. The latency before symptoms in most cases argues against implant trauma. Use of relatively high-concentration, high-dose, or unlabeled analgesic drugs and admixtures is a plausible etiology. The authors present evidence that delivery of high dose or high concentration drugs may stimulate a chronic immune response at or near the catheter tip. Patients who require high dose opioid therapy, or who receive drugs or admixtures that are not labeled for intrathecal use should be monitored closely for signs of an extraaxial mass or catheter malfunction.

Cervical 1-2 Laminectomy for Spinal Cord Stimulation in Chronic Upper Extremity Pain

Martin E. Weinand, M.D., Istvan Takacs, M.D. and Otto Ubrik, M.D. (Tucson, AZ)

Introduction: Cervical 1-4 (C1-4) spinal cord stimulation (SCS), via C1-2 partial laminectomy, was studied for technical feasibility and efficacy in the treatment of chronic upper extremity pain.

Methods: Five consecutive patients with chronic upper extremity pain underwent C1-2 partial laminectomies for C1-4 permanent SCS implantation. All patients underwent general anesthesia and paramedian C1-4 epidural SCS implantation confirmed with fluoroscopy. Successful pain control was defined as $\geq 50\%$ pain relief (%PR).

Results: Four patients had failed previous SCS trial and/or implantation using percutaneous technique at mid- to lower cervical spine levels. In all 5 patients (male/female = 3/2, mean age \pm standard error = 49.6 \pm 3.9 years, diagnoses: chronic regional pain syndrome = 3, cervical radiculopathy = 2), C1-2 partial laminectomies were performed for sublamina SCS implantation over the C1 arch to the C1-4 epidural levels. All 5 patients experienced successful SCS pain control ($\geq 50\%$ PR) at mean 2.2 \pm 1.0 months.

Conclusions: Based on initial short-term follow-up, high cervical laminectomy appears to be a promising new technique, requiring further study, of SCS implantation for relief of chronic pain in all locations throughout the upper extremity. This procedure is particularly useful for chronic shoulder pain which has been, heretofore, difficult to control using the technique of lower cervical percutaneous SCS implantation.

Radiosurgery for Idiopathic Trigeminal Neuralgia: Results based on a Four-year Experience

Bruce E. Pollock, M.D., Loi K. Phuong, M.D., Deborah A. Gorman, R.N., Robert L. Foote, M.D. and Scott L. Stafford, M.D. (Rochester, MN)

Introduction: Each year more patients with trigeminal neuralgia undergo radiosurgery, including a large number of younger patients who are candidates for microvascular decompression (MVD).

Methods: The characteristics and outcomes of 118 consecutive patients having radiosurgery were retrieved from a prospectively maintained database. Mean patient age was 67.8 years; the majority (76%) had prior surgery (mean, 1.8 operations). Facial pain results were calculated using the product-limit method with excellent outcomes (no pain, no meds.) as the dependent variable. Mean follow-up was 22 months (range, 1-48).

Results: The actuarial rate of achieving and maintaining an excellent outcome was 57% and 55% at 1- and 3-years after radiosurgery. More patients without prior surgery achieved and maintained excellent outcomes (67% at 1- and 3-years) compared to patients having prior surgery (51% and 47% at 1- and 3-years) (P=0.04). New persistent trigeminal dysfunction was noted in 43 patients (36%). Non-bothersome numbness or paresthesias occurred in 29 patients (24%),

Calendar of Events

6-11 April, 2002 - 70th AANS Annual Meeting

Location: Chicago, IL
WWW: www.neurosurgery.org/aans/index.html
e-mail: info@aans.org
Phone: 800-367-9286

17-22 August 2002 - 10th World Congress on Pain

Location: San Diego, CA
WWW: www.iasp-pain.org/02congopen.html
e-mail: iaspexec@juno.com

21-26 September 2002 - Annual Meeting of the CNS

Location: Philadelphia, PA
WWW: www.neurosurgery.org/cns/meetings/index.html

14-17 November 2002 - 4th National Conference Trigeminal Neuralgia Association

Location: San Diego, CA
Host: University of California, San Diego Dr. John F. Alksne
WWW: www.tna-support.org

18-23 February 2003 - 19th Annual Meeting American Academy of Pain Medicine

Location: The Fairmont, New Orleans, LA
WWW: www.painmed.org/
e-mail: aapm@amctec.com

Trigeminal Neuralgia Association - NEW ADDRESS!

Trigeminal Neuralgia Association
2801 S.W. Archer Road, Suite C
Gainesville, Florida 32608
Phone: 352-376-9955
Fax: 352-376-8688

Do You Have Neuro-Knowledge? Join the AANS Neuro-Knowledge Network

The American Association of Neurological Surgeons (AANS) has partnered with Outcome Sciences, Inc. (OS), a leader in on-line clinical research and data collection, to form Neuro-Knowledge. Neuro-Knowledge combines web-based data collection infrastructure with the world's largest network of neurosurgeons to establish a unique resource for conducting clinical research. Neuro-Knowledge manages neurosurgical clinical trials and registries, evaluates neurosurgical practice and expense issues and gathers opinions from practicing neurosurgeons. The AANS is now developing Neuro-Knowledge panels, a network of neurosurgeons who want to participate in funded research activities. The AANS invites you to join the AANS Neuro-Knowledge Network. Your participation can range from completing occasional surveys to serving as an expert consultant or speaker to being an investigator in a clinical trial. Each time an opportunity matches your interests you will receive a notification describing the project and how much compensation you will receive for your participation. You decide whether or not to participate.

Neuro-Knowledge's services are focused on three areas of data collection: clinical trials (including recruiting investigators and managing data), observational studies such as registries, and opinion research (including surveys, expert panels and speakers). Neuro-Knowledge will work with clinical investigators, device manufacturers, academic research centers and others interested in high quality clinical data collection relating to neurosurgical patients, procedures and opinions.

Also, as we continue to build the Neuro-Knowledge Network of physicians, the AANS is seeking member physicians who would be willing to assist us with contacting corporations to expand our client base. If you have any questions, or if you are an independent consultant working with a company, and would be willing to assist AANS in making contact with the appropriate personnel in that company, please go here ...

<https://user.medisurv.com/neuro-knowledge/index.html>

Future AANS Annual Meetings

2002 Chicago
2003 San Diego
2004 Orlando
2005 New Orleans



Future CNS Annual Meeting Sites

2002 Philadelphia September 21-26
2003 Denver October 18-23
2004 San Francisco October 16-21
2005 Boston October 8-13
2006 Chicago October 7-12
2007 San Diego September 15-20
2008 Orlando September 20-25
2009 New Orleans October 24-29



Pain Section Young Investigator Fellowship Award 2003

supported by

Neurosurgery Research and
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and
Medtronic, Inc.

Stipend \$25,000 over one year.

Supports advanced research in Pain.

Submit applications
July 1 - November 30, 2002

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whereas 14 patients developed bothersome dysesthesias (12%). Only a radiation dose of 90 Gy correlated with new trigeminal deficits or dysesthesias ($P=0.0005$). Patients with new trigeminal dysfunction achieved and maintained excellent outcomes 76% and 74% at 1- and 3-years after radiosurgery, compared to only 46% and 42% for patients without post-radiosurgery trigeminal dysfunction ($P=0.004$).

Conclusions: Radiosurgery provides complete pain relief for the majority of patients with idiopathic trigeminal neuralgia. Success after this destructive technique correlates with the development of trigeminal dysfunction. As the long-term results of this procedure are unknown, MVD should continue to be the primary operation for medically fit patients with trigeminal neuralgia.

Using personality variables to predict perception of pain intensity in preoperative neurosurgical patients

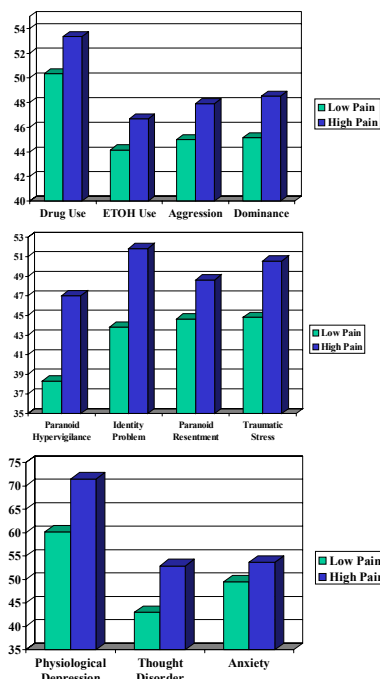
Donald B. Burton, Ph.D., Dante Morasutti, M.D., Todd Vitaz, M.D. (Louisville, KY), Troy Fessel (DePauw, IN), Sonya Sandridge (Louisville, KY), Arash Sepehri (Floyds Knobs, IN), Tony Schellenberger (Lanesville, IN), Fred Hecht (New Albany, IN) and Cathy Fort (Louisville, KY)

Introduction: Debate exists as to whether psychological tests predict the experience of pain. Some argue that it has minimal predictive value, while others report it can discriminate between pain relief and poor neurosurgical outcome. We performed an analysis to determine whether personality and demographic variables can predict reports of perceived pain intensity in preoperative neurosurgical patients.

Methods: A step-wise multiple regression procedure was conducted using a sample of 50 patients referred for preoperative psychological evaluations in anticipation of pain pump implantation. Selected demographic variables including age, education, marital status, gender, and the subtests from the Personality Assessment Inventory were entered into the

equation and then assessed for predictive power. Using the step-wise procedure, an iterative sequence of variable selection was performed which resulted in an optimal subset of variables that predicted the perception of pain intensity as measured by a ten point scale (1=no pain, 10=worse pain).

Results: The step-wise procedure selected 12 personality and 2 demographic variables that accounted for 98% of the variability in perception of pain intensity (Adjusted $R^2=.975$). Lines of best fit were then applied as a



means of interpreting the impact of individual variables on perception of pain intensity.

Conclusions: Our results clearly support the contention that psychological variables derived from standardized psychological tests predict a significant portion of the variability in the perception of pain intensity in neurosurgical patients. These findings suggest psychological testing does have the potential to predict the experience of pain and perhaps identify those patients who may be at risk for poor neurosurgical outcome.

cont. from Page 2 ...

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Surgical Management of Pain

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Not since White and Sweet published *Pain and the Neurosurgeon* in the 1960's has there been a single-volume, comprehensive review of the entire field of neurosurgical pain management. Burchiel's complete, one-volume source book, an indispensable professional tool examining all current concepts of pain neuroanatomy, physiology, and pathophysiology; new procedures that minimize invasiveness and postoperative neurological deficiencies; and the entire scope of surgical and medical management of pain.

Kim J. Burchiel, M.D. is Professor and Chairman of the Department of Neurological Surgery, Oregon Health & Science University, Portland, Oregon.

2002 Interventional Therapies in Neurosurgical Pain Management

When: April 4-5, 2002 McCormick Place-Lakeside Center, Chicago, IL (*specific times on page 10*)

Course Directors: Jeffrey A. Brown and Ali R. Rezai

Symposium Fees:

Neurosurgeons: \$1000 Neurosurgical Nurses: \$1000
Neurosurgical Residents/Fellows: \$250

Why YOU Should Attend this Workshop:

- ✓ Expansion of treatment options for your practice
- ✓ Practical topics for many different types of neurosurgical practices
- ✓ Didactic and hands-on sessions for ablative and augmentative therapies
- ✓ Large faculty representing major areas of neurosurgical pain management
- ✓ Coding and reimbursement information for pain treatment procedures
- ✓ Cost effectiveness comparisons of different treatment options

Who Should Attend:

Neurosurgeons, neurosurgical residents, and nurses involved in pain management or those desiring to add pain management to their practices. This workshop emphasizes the use of various neurosurgical pain procedures with emphasis on applying these techniques in the context of a multidisciplinary pain practice.

Symposium Description:

This two-day symposium will provide a comprehensive review of the neurosurgical treatment of chronic pain. The symposium will emphasize practical elements of neurosurgical techniques in spinal stimulation, intraspinal drug infusion and ablation. Recent innovations in technology such as motor cortex stimulation, transpedicular injection techniques and IDET will be carefully evaluated. Afternoons will be dedicated to hands-on workshops in spinal stimulation, infusion, trigeminal percutaneous ablative and facet ablative techniques along with transpedicular injection techniques. Two-dozen faculty members each with extensive experience in their areas of focus will participate both in morning lectures and afternoon practical courses.

Course Objectives:

Upon completion of this course participants should be able to:

- ✓ Describe the relative roles of neuroablative and neuroaugmentative pain control techniques.
- ✓ Identify the role of the multidisciplinary team in pain management.
- ✓ Explain the rationale for neuroaugmentative pain control techniques.
- ✓ Explain the rationale for neuroablative pain control techniques.
- ✓ Select patients who are appropriate candidates for neuroablative and neuroaugmentative therapies, including implantable spinal cord stimulation and drug infusion systems.

✓ Develop experience in the surgical techniques required for these therapies.

Afternoon hands-on sessions will explore the technical aspects of augmentative and ablative procedures. Following completion of the afternoon hands-on sessions, participants should be able to:

- ✓ Identify patients who are candidates for spinal neurostimulation, perform surgical implantation of spinal neurostimulators and, understand and apply the concepts of spinal stimulation.
- ✓ Identify patients who are candidates for spinal infusion of opioids for pain control, perform surgical implantation of spinal catheters, and understand and apply the concepts of subarachnoid opioid infusion for pain control.
- ✓ Identify which patients would be candidates for peripheral nerve stimulation, perform surgical implementation of peripheral nerve stimulation, and understand and apply the concepts of subcutaneous stimulation.
- ✓ Identify thoracic pedicles for vertebral injection. They should understand the risks and potential complications of this procedure.
- ✓ Identify the foramen ovale on fluoroscopy, place a cannula or spinal needle through the foramen ovale, and understand the risks and complications of ablative trigeminal surgery.
- ✓ Demonstrate the scope of pain surgery procedures, discuss common pain procedures, and describe the accreditation of pain surgery fellowship programs.
- ✓ Identify the indications for facet denervation, cordotomy and DREZ lesioning as well as the risks and complications of these procedures.

CME Credit:

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the American Association of Neurological Surgeons and them AANS/CNS Section on Pain. 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 this educational activity for a maximum 15.5 hours in Category 1 credit toward the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he or she spent in the educational activity.

Cancellation Policy:

Requests for registration cancellation must be made in writing and sent to the AANS Registration Department, c/o Conference Management Systems, P.O. Box 998, Park Ridge, IL 60068 or faxed to 800-682-9984 (U.S.) or 847-698-9245 (International). All refunds will be processed and mailed following the Annual Meeting. Refunds will be made in accordance with the following schedule.

- ✓ Cancellation received on or before **March 8, 2002**, will receive a full refund minus a \$25 processing fee.
- ✓ Cancellations received between **March 9** and **April 2, 2002** will receive a full refund minus a \$75 processing fee.
- ✓ No refunds of fees will be allowed after **April 2, 2002**.

Workshop schedule on page 10

2002 Interventional Therapies in Neurosurgical Pain Management

Thursday, April 4, 2002

8:00 am - 8:05 am Introduction - Jeffrey A. Brown and Ali R. Rezaei, Co-Directors
8:05 am - 8:35 am Principles of Pain Neurophysiology and Anatomy - James N. Campbell
8:35 am - 9:00 am Prelude to Surgical Intervention: Medical Management of Chronic Pain - Jaimie M. Henderson
9:00 am - 9:25 am Neuropathic vs. Nociceptive Pain: Approaches and Algorithms - Robert M. Levy
9:25 am - 10:00 am Spinal Cord Stimulation: Indications, Techniques, Outcomes - Giancarlo Barolat
10:00 am - 10:15 am Break
10:15 am - 10:35 am Principles of Stimulator Programming - Richard B. North
10:35 am - 10:55 am Peripheral and Occipital Nerve Stimulation - Richard L. Weiner
10:55 am - 11:10 am Epidural Motor Cortex Stimulation - Yves Keravel
11:10 am - 11:20 am Deep Brain Stimulation - Ali R. Rezaei
11:20 am - 12:00 pm Intrathecal Pumps: Indications, Techniques and Outcome for Pain - Richard Deren Penn
12:00 pm - 1:00 pm Lunch

Workshops Thursday, April 4, 2002

1:00 - 5:00 pm Participants will rotate among these workshops in one-hour time blocks.

Spinal Cord Stimulation

Faculty: Giancarlo Barolat, Robert M. Levy and Richard B. North

Intraspinal Drug Infusion

Faculty: Richard Deren Penn, Jaimie M. Henderson

Peripheral Nerve Stimulation

Faculty: Richard L. Weiner, Richard K. Osenbach

Transpedicular Injection Techniques

Faculty: Richard D. Fessler

chairman's message continued from cover

in Pain. All residents with an interest in pain research are encouraged to submit applications between July 1 and November 30, 2002 for the 2003 award.

Continuing education is also vital to maintaining a high level of interest in the neurosurgical treatment of pain. The Section on Pain is sponsoring our **Third Satellite Symposium on Interventional Therapies in Surgical Pain Management**, to be held on April 4th and 5th preceding the AANS meeting in Chicago. Co-directors **Ali Rezaei** and **Jeff Brown** have put together a tremendous program featuring world-renowned faculty and current topics such as motor cortex stimulation, transpedicular injection techniques, and IDET. Please join us for what promises to be an outstanding symposium. Also please plan to attend the Pain Section's afternoon scientific session on Wednesday, April 10, featuring the **William H. Sweet Young Investigator Award** presentation to **Ashwini Sharan** for his paper entitled "MRI and spinal cord stimulation: an experimental safety study". Preceding the Sweet Award presentation will be a one-hour symposium entitled "How I Do It: Interventional Treatment of Low Back Pain" with **Richard Fessler**, **Richard North**, and **Robert Heary** addressing various facets of the complex problem of low back pain.

Friday, April 5, 2002

8:00 am - 8:30 am Psychological considerations and Screening in Chronic Pain Therapy - Joel L. Seres
8:30 am - 9:00 am Training a Pain Neurosurgeon - Kim J. Burchiel
9:00 am - 9:20 am Central Ablative Techniques - Nicholas M. Barbaro
9:20 am - 9:50 am Trigeminal Neuralgia: Principles and Results of Percutaneous Ablative Techniques - Jeffrey A. Brown
9:50 am - 10:10 am Coffee Break
10:10 am - 10:30 am IDET - Kenneth S. Yonemura
10:30 am - 10:50 am Gamma Knife Radiosurgery - Bruce E. Pollock
10:50 am - 11:10 am Vertebroplasty - Richard D. Fessler
11:10 am - 11:40 am Coding and Reimbursement Issues in Pain Procedures - Samuel J. Hassenbusch
11:40 am - 12:00 pm Questions, Discussion, Closing Comments - Jeffrey A. Brown and Ali R. Rezaei
12:00 pm - 1:00 pm Lunch

Workshops, Friday, April 5, 2002

1:00 - 5:00 pm Participants will rotate among these workshops in one-hour time blocks.

Trigeminal Neuralgia

Faculty: Bruce E. Pollock, Kenneth F. Casey, Robert Nugent, Lucia Zamorano, Samuel Hassenbusch

Peripheral Ablative (Discussion Session)

Faculty: Richard B. North, Kim J. Burchiel

Spinal Ablative

Faculty: Nicholas M. Barbaro

Transpedicular Injection Techniques

Faculty: Richard D. Fessler

Pain neurosurgery faces many challenges in the coming years. With your help, we can continue our leadership in pain management and stimulate further interest in this most intellectually challenging of neurosurgical pursuits. For those who practice in an academic setting, encourage the residents to take an interest in pain management, and highlight both the intellectual challenges and the gratification of helping patients who may have nowhere else to turn. All of us should seek out collaborations with colleagues in other disciplines and show leadership in the field of pain, demonstrating how neurosurgical involvement can help improve patient outcomes. If I can be of assistance in any way, please don't hesitate to contact me at henderj@ccf.org.



Jaimie Henderson, M.D.

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Application for Membership



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Association of
Neurological
Surgeons



AANS/CNS Section on Pain

Eligibility: Members of the AANS and/or CNS who are actively interested in the management of pain problems.

I. Biographical:

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

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

II. Category of Membership Requested:

- Active Associate International

III. Membership, Certification and Practice:

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

Signature of Applicant

Date

**Please return completed application with your membership fee of \$50 to:
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