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Kim J Burchiel, MD, FACS

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## Message from Chairman

### Jaimie Henderson, MD



The medical and surgical treatment of pain is undergoing a continuous metamorphosis. With ongoing growth of knowledge about the mechanisms of pain, and with the continued development of new medications, technologies, and procedures to

capitalize on these advances, our capability to treat patients with acute and chronic pain is greater than it has ever been. These capabilities are now so commonplace and sophisticated that the adequate treatment of pain is considered a basic right that every patient should have. As neurosurgeons, we thus face numerous challenges in our approach to the patient in pain. What is the best option to choose from the wide armamentarium of medical and surgical treatments? What pressures do we face from the government, from Medicare, and from non-governmental organizations such as JCAHO? How do we position ourselves in order to maintain and build our influence in pain management, especially given the unique capabilities we have to alter the function of the nervous system, both by ablation and augmentation? As newly-elected chairman of the Joint Section on Pain of the AANS/CNS, one of my foremost goals is to articulate answers to these questions from a neurosurgical perspective. To this end, I would encourage every member of the Joint Section to become educated about these issues, formulate opinions, and communicate these opinions to your Executive Committee. The upcoming CNS meeting in San Diego provides an ideal opportunity to learn more about all of these vital topics.

Pain management is a dynamic field, with new techniques being introduced on an almost daily basis. An all-day practical clinic on Sunday, September 30, "Neuroaugmentation for Pain Control," will cover the indications and techniques of the latest nondestructive procedures for pain treatment. Luncheon seminars on pain topics will be offered Monday through Wednesday, with emphasis on ablative techniques, spinal cord stimulation, neuropathic vs. sympathetic pain states, trigeminal neuralgia, and failed back surgery syndrome. On Tuesday, October 2, Gwynedd E Pickett will receive the Ronald Tasker Award for "Percutaneous Retrogasserian Glycerol Rhizotomy in the Management of Trigeminal Neuralgia Associated with Multiple Sclerosis." Sponsored by ANS, Inc., this prestigious award is given for the best presentation by an investigator within 5 years of completion of residency training at the CNS Annual Meeting, and includes a \$1000 honorarium. Following the award presentation and open scientific session, Jeffrey A Brown, Richard K Osenbach, and Joel L Seres will engage in a lively discussion on a controversial topic entitled "Chronic Low Back Pain: Fuse, Infuse or Refuse?"

Keeping abreast of scientific, technical, and clinical advances allows us to render the best care for our patients. However, as medicine becomes increasingly legislated and attention is focused on delivery of standardized quality care, legal issues in pain management assume ever greater importance. Pain Section members have a unique opportunity to hear Dr. Michael Ashburn, Professor of Anesthesiology at the University of Utah, speak on the political landscape of pain management at the Special Symposium on Wednesday, October 3 entitled "Pain, Politics, and Patient Care." Dr. Ashburn is the President-elect of the American Pain Society, and has served on numerous advisory committees representing pain medicine. His experience in organized pain medicine is broad and extensive. Dr.

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# The case for the rational use of Opioids for Chronic Pain

**Jaimie Henderson, MD, *St. Louis University***

Chronic pain is a complex entity. Numerous factors can contribute to the chronic pain state, making evaluation and treatment of this patient population very difficult and often frustrating. Physical factors such as ongoing inflammation, tissue damage, deafferentation, and re-injury couple with complex psychological factors including depression, anxiety, peculiarities of personality and secondary gain issues to produce a diagnostic and therapeutic dilemma. Unfortunately, there exist few effective treatment options for this patient population. As neurosurgeons, we naturally gravitate toward invasive procedures to address perceived problems like instability, neural compression, or other more vague concepts like “disc degeneration”. There also exist noninvasive options such as physical therapy, conditioning and manipulation. It is important to address psychological issues as well, both through counseling and through behavioral treatments. However, it is my belief that pharmacological treatments play an important role in the treatment of chronic pain, and that opioids can provide help where many other treatment options fail. At the most extreme end of the spectrum are those who believe that no treatment is appropriate for this patient population, and that they should learn to “ignore” their pain. While this is certainly the most convenient option, as it requires no further effort on the part of the practitioner, it is the least humane approach to the treatment of a difficult and increasingly widespread problem.

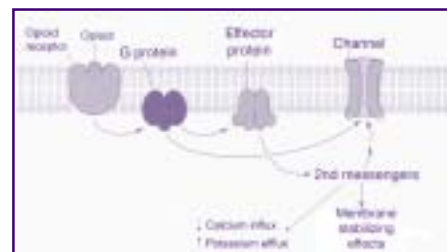
Why should one even consider the use of opioids in chronic pain? After all, there have been numerous reports of their adverse effects, and very few controlled studies of long-term efficacy. However, there are several theoretical and practical advantages to considering the use of opioids for chronic pain treatment. The theoretical mechanisms of opioid action predict that they should be effective for blocking nociceptive impulses, both peripherally and centrally. Compared with many other medications used for pain treatment (most notably the antiinflammatory agents), their long-term side effect profile is much better. Their clinical efficacy has been proven in acute pain states, and is being better defined in chronic pain states. And perhaps most importantly, they can often provide an alternative where few exist, to help patients who are suffering from chronic pain.

Opioids decrease the firing of nociceptive-specific neurons throughout the neuraxis. Opioid receptors are coupled to various intracellular enzymes and ion channels by guanine nucleotide-binding proteins called G proteins. Binding of an opioid causes a conformational change in the receptor, which in turn causes activation of a G protein bound to the inner surface of the membrane. The G protein then dissociates into its subunits, which in turn interact with ion channels to decrease calcium influx, increase potassium efflux, and to cause other membrane-stabilizing effects. The net result is inhibition of nociceptive transmission.

Based on these experimental results, one would expect opioids to show commensurate clinical efficacy. In acute pain, the antinociceptive effects of opioids are well established. Several studies have demonstrated long-term efficacy in chronic pain treatment, and this is confirmed by personal experience. Even over three or four years of treatment, patients can be maintained on stable doses of long-acting agents, typically MS Contin (long-acting morphine), Oxycontin (long-acting oxycodone), and methadone. Side effects are well known, and can include drowsiness, cognitive impairment, respiratory depression, constipation, urinary retention, itching, and others. However, many of these side effects are transient and improve with long-term treatment. There are some patients who may develop decreased fertility and possibly hyperalgesia. Overall, however, the side effect profile is more acceptable than the known complications of NSAID use, which can include GI ulceration, renal damage, and hepatic damage.

While opioids are useful for chronic pain treatment, they should be employed as part of structured regimen, which may include behavioral and psychological treatment, as well as physical therapy and other medications. There are some potential drawbacks to opioid use, including tolerance, dependence, and addiction. However, with close attention to prescribing practice, including the use of a medication contract, good documentation of goals and improvement, and a meticulous record of prescription amounts and dates, patients can be maintained on safe and effective opioid treatment for years.

Opioid medications are thus indicated for the treatment of chronic pain. Well-studied mechanisms of action predict that they should be effective, and clinical practice bears this out. The side effect profile is acceptable, especially when compared to antiinflammatory agents. The drawbacks to their use are few, if used responsibly and with good documentation. Finally, they may be one of the few alternatives for some patients suffering from chronic pain.



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Dr. Henderson’s article above is a summary of his recent participation as a panelist in the “Symposium Rational Use of Opioids for Chronic Pain”, presented at the AANS meeting, 2001. Dr. Phil L Gildenberg’s companion lecture, at the AANS meeting, 2001, illustrated the point-counterpoint nature of the session.

# Selected Abstracts

Annual AANS Meeting, Toronto 2001

## Gamma Knife Radiosurgery for Treatment of Trigeminal Neuralgia: Long-Term Results

Ronald F Young, MD, Deane B Jacques, MD, Rufus Mark, MD, Brian Copcutt, PhD, Francisco Li, MS (*Seattle, WA*)

The purpose of this study was to assess the outcome of Gamma Knife Radiosurgery (GKS) in the treatment of trigeminal neuralgia.

Between 1991 and 1999, 435 patients underwent GKS for trigeminal neuralgia, following unsuccessful pharmacological treatment and unsuccessful surgical treatment in 185 patients. The 4-mm secondary collimator was used to deliver maximum radiosurgical doses between 76 and 98 Gy to the trigeminal nerve root as demonstrated on stereotactic MR images such that the 50% isodose line was tangential to the pontine surface. Median follow-up was 51 months (range 12-109 months). At a 6 month follow-up, 392 patients (90.1%) were either completely free of pain without use of medications (60.2%) or completely pain free on a small dose of medications, which did not produce side effects (29.9%). Forty-three patients (9.9%) were considered treatment failures. At last follow-up, the rate of overall success had decreased to 78% following a single treatment. Retreatment of 51 patients results in a successful pain relief in 41 (80.4%). At last follow-up, 370 patients (85.1%) were considered to have been successfully treated, with 283 (65%) completely pain free and another 87 (20.1%) pain free on a small dose of medication. The only side effect of GKS was transient facial numbness, which occurred in 71 patients (16.3%).

Gamma Knife Radiosurgery for trigeminal neuralgia approximates the success rates of the other surgical treatments and is considerably safer. We recommend GKS for trigeminal neuralgia when pharmacological treatment fails or is not well tolerated.

## Dose Escalation in Trigeminal Neuralgia is Associated with Increased Risk of Facial Numbness and Dysesthesias

Loi K Phuong, MD, Bruce E Pollock, MD, Robert L Foote, MD, Scott Stafford, MD, Deborah A Gorman, RN (*Rochester, MN*)

**Introduction:** Stereotactic radiosurgery is being used more frequently to manage patients with trigeminal neuralgia. To improve facial pain outcomes, many centers have increased the prescribed radiation dose to the trigeminal nerve.

**Methods:** Between May 1997 and December 1999, 68 patients underwent gamma knife radiosurgery for typical trigeminal neuralgia. All patients were treated with a single 4mm isocenter. Twenty-five patients (40%) received 70 Gy (low-dose); 38 patients (60%) received 90 Gy (high-dose). The groups were similar in regards to age, sex, pain duration,

number of surgeries, and preexisting trigeminal deficits. The primary facial pain outcomes for analysis were excellent (pain-free, no meds) and good (pain-free, reduced meds). The mean follow-up after radiosurgery was 14 months (range, 2-36).

**Results:** At last follow-up, 10 low-dose patients (40%) remained pain-free compared to 24 high-dose patients (63%) ( $P=0.12$ ). Additional surgery was performed in 11 low-dose patients (44%); 8 high-dose patients (21%) had later surgery ( $P=0.10$ ). High-dose radiosurgery was associated with an increased rate of trigeminal dysfunction (71% vs 20%,  $P=0.0001$ ); bothersome dysesthesias occurred in 13 high-dose patients (34%) whereas only 1 low-dose patient had this complication ( $P=0.01$ ). Three high-dose patients (8%) developed corneal numbness after radiosurgery.

**Conclusion:** Increased radiation doses may correlate with better facial pain outcomes after trigeminal neuralgia radiosurgery. However, the incidence of significant trigeminal dysfunction is markedly increased after high-dose trigeminal radiosurgery. Due to the nonselective nature of this ablative technique, dose prescription should be limited to less than 90 Gy.

## Subcutaneous Neurostimulation for Intractable C2 Mediated Headaches

Richard L Weiner, MD, Kenneth M Alo, MD (*Houston, TX*)  
Kenneth L Reed, MD, Michelle L Fuller, RN, NP-C (*Dallas, TX*)

The technique of subcutaneous neurostimulation for intractable occipital headaches was developed and perfected over the past 7 years in our clinic for selected patients refractory to other medical and surgical treatment modalities. The technique involves placement of a single or dual multipolar wire electrode array via a percutaneous approach into the subcutaneous space, transversely, at, or near, the level of C1. At relatively low voltages (1 to 3 volts) most patients perceive an agreeable paresthesia pattern in the distribution of the greater and/or lesser occipital nerves which effectively blocks C2 mediated headaches which may be either paroxysmal or chronic in nature. The long term success rate on 13 patients with an average 4 year follow-up is approximately 80% good to excellent results with at least 50% pain relief. We now have mean 2 year follow-up data on 62 patients undergoing 65 implants with similar outcomes of 80% success in controlling intractable occipital headaches. Subcutaneous electrical stimulation is a new application of existing neuromodulation equipment and techniques which may have many indications for control of intractable pain syndromes in both dermatomal and myotomal sensory distributions.

### AANS Online Marketplace

<http://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 PhD, Allan H Friedman MD,  
Janice Ovelmen-Levitt PhD

# Young Investigator Award William H Sweet

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

## Awardee: Dragan F Dimitrov, MD

Dr. Dimitrov is a junior resident at Duke University Medical Center. He received his medical degree from New York University School of Medicine and his undergraduate degree from Duke University. He has developed reflectance spectroscopy experiments to analyze the laser tissue welding process. Currently, he is conducting research on the neurophysiology of phantom limb sensations in a primate model using chronic electrophysiological recordings.

## Human Adult Cortical Plasticity: Lidocaine Anesthesia Generates Effects Similar to Limb Amputation

Dragan F Dimitrov, MD and Miguel Nicolelis, MD, PhD (*Durham, NC*)

It has been shown that amputation of limbs generates phantom sensations postulated to be due to reorganization of the human somatosensory homunculus. For example, stimulation of the face results in the perception of stimulation of the hand, after ipsilateral arm amputation in some patients thought to be due to the proximity of hand and face on the somatosensory homunculus. It is also known that lidocaine anesthesia generates immediate somatosensory reorganization in animals. We hypothesize that the adult somatosensory cortex is plastic and that lidocaine anesthesia of a human limb mimics the effects of amputation, generating immediate cortical somatosensory homunculus reorganization resulting in phantom sensations similar to those experienced by patients after amputation. To test this hypothesis, we performed sensory neurological examinations in 50 patients after lidocaine brachial plexus block. We found that soft touch stimulation of the face after ipsilateral lidocaine brachial plexus block results in the illusory perception that the ipsilateral hand is being stimulated in a significant proportion of subjects. These results are similar to those obtained from amputees. We conclude that changes in the somatosensory cortex after lidocaine anesthesia are similar to those that occur after amputation. This supports the postulate that cortical somatosensory reorganization occurs after amputation and accounts for phantom limb sensations.

## PAIN SECTION OFFICERS

### OFFICERS

YEAR	OFFICE	MEMBER
2001-2003	Chairman	Jaimie Henderson, MD
2001-2002	Vice-chair	Oren Sager, MD
2001-2005	Secretary-Treasurer	Kim Burchiel, MD

### EXECUTIVE COUNCIL MEMBERS

1999-2003	John Gorecki, MD
1999-2003	John Oakley, MD
1998-2002	Richard Osenbach, MD
1999-2003	John Piper, MD
2001-2005	Ali Rezai, MD

NEUROSURGERY://ON-CALL - Pain Section  
<http://www.neurosurgery.org/pain/index.html>

# 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, PhDs, 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**

<http://www.aapainmanage.org/>

### **American Academy of Pain Medicine**

<http://www.painmed.org/>

### **American Association of Neurological Surgeons**

<http://www.neurosurgery.org/aans/index.html>

### **American Board of Pain Medicine**

<http://www.abpm.org/>

### **American Pain Foundation**

<http://www.painfoundation.org/>

### **American Pain Society**

<http://www.ampainsoc.org/>

### **AANS/CNS Pain section**

<http://www.neurosurgery.org/pain/index.html>

### **International Association for the Study of Pain**

<http://www.halcyon.com/iasp/>

### **JCAHO Pain Standards for 2001**

[http://www.jcaho.org/trkhco\\_frm.html](http://www.jcaho.org/trkhco_frm.html)

### **Medtronic Advanced Pain Therapies**

<http://www.medtronic.com/neuro/apt/>

### **Trigeminal Neuralgia Association (TNA)**

<http://www.tna-support.org/>



## Colleagues:



An application, in Adobe Acrobat format, for membership in the Joint Section on Pain can be located at **<http://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.



**Submit your information, news, books, jobs, meetings and ideas for the Spring 2002 issue of the Joint Section on Pain Newsletter to Shirley McCartney, PhD at [mccartns@ohsu.edu](mailto:mccartns@ohsu.edu)**

# Selected Oral Posters

Annual AANS Meeting, Toronto 2001

## Microvascular Decompression for Hemifacial Spasm: The UCSF Experience

Praveen V Mummaneni, MD, Ty Thaiyananthan, BS, Charles B Wilson, MD (*San Francisco, CA*)

**Object:** The standard surgical technique for the treatment of hemifacial spasm (HFS) is microvascular decompression (MVD) of the facial nerve. The objective of this report is to retrospectively analyze the outcomes for a large cohort of patients with HFS who were treated with MVD by a single surgeon (CBW).

**Methods:** A retrospective review of 180 patients (127 women, 53 men) (age range 26-82 years, mean 52.8±9.3 years) with symptomatic HFS treated with MVD was performed. A total of 38 patients were lost to follow-up within 6 months of discharge. The length of follow-up for the remaining 142 patients ranged from 1 to 26 years (mean 11.2 ± 7.2 years). In this study, 171 patients (95%) underwent a single unilateral MVD and nine (5%) underwent repeat MVD. Of the 180 patients, 72% had immediate postoperative relief from HFS, with 91% experiencing some improvement in HFS. Subgroup analysis showed that men had better results than women. Second MVD procedures were less successful and had more complications. Vessels most commonly implicated in causing HFS were the anterior inferior cerebellar artery (AICA) (34.4%), posterior inferior cerebellar artery (PICA) (27.0%), vertebral artery (VA) (16.4%), and small unnamed vessels (7.4%). The patient's age, implicated vessel, side of spasm (58.8% left, 41.1% right) and preoperative duration of symptoms (range 1 month to 36 years, mean 6.4 ± 5.5 years) had no effect on outcome. Postoperatively, 5% of patients experienced severe permanent facial weakness and 5% experienced permanent ipsilateral deafness. There was one perioperative death (0.05%) and two brainstem infarcts (1.1%).

**Conclusion:** Microvascular decompression is a safe and efficacious surgical treatment for patients with HFS.

## The Significance of Allodynia in Post-stroke Pain: Somatosensory Response with Microstimulation and Results of Deep Brain Stimulation

Michael Y Oh, MD, (*Pittsburgh, PA*), Seong H Kim, MD PhD (*Taegu, Korea*), Andres M Lozano, MD PhD, Ronald R Tasker, MD (*Toronto, ON*)

**Introduction:** Allodynia is the elicitation of pain by a normally non-painful stimulus and occurs in nearly two-thirds of central post-stroke pain (CPSP) patients. We have previously described a phenomenon of "central allodynia", in which patients experience pain on electrical stimulation in ventrocaudal nucleus. In such patients, deep brain stimulation

(DBS) targeted at the thalamocortical pathway may be less successful.

**Objective:** We undertook this study to characterize the somatosensory response to electrical stimulation in CPSP patients with allodynia compared to patients without allodynia, and to determine whether central allodynia affected target selection or the outcome of deep brain stimulation.

**Methods:** Thirty-seven patients with CPSP underwent stereotactic thalamic exploration with microelectrode recording, microstimulation, and macrostimulation. At each site spontaneous activity, effective stimulus for evoking a response, type of response, and receptive fields were determined. A DBS electrode was implanted in one or more sites (thalamus, periventricular gray, medial lemniscus) for a trial stimulation period and, if successful, later internalized.

**Results:** Patients with allodynia had significantly more stimulation-evoked pain and a higher percentage of painful sites compared with the allodynia-negative group, 77.8% versus 22.2% and 35.6% versus 2.3%, respectively. Patients with stimulation-evoked pain had the best results when periventricular gray was included as a DBS target.

**Conclusion:** The mechanism underlying the pain process may be different for constant, neuralgic, and evoked pain. In particular, allodynia seems to arise from perverted processing of information in the tactile relay nucleus and can be treated by chronic periventricular gray stimulation.

## Spinal Cord Stimulation (SCS) for Failed Back Syndrome: Nonspecific Limb Pain versus Neuropathic Pain of Nerve Root Origin

Seong H Kim, MD, PhD, (*Taegu, Korea*) Ronald R Tasker, MD, (*Toronto, ON*) Michael Y Oh, MD, (*Pittsburgh, PA*)

**Objective:** To compare the outcome of spinal cord stimulation (SCS) in patients with "failed back syndrome" (FBS) and nonspecific limb pain versus neuropathic pain syndromes.

**Methods:** A retrospective review of 122 patients accepted for treatment with SCS between Jan. 1990 and Dec. 1998 was performed. All patients first underwent a trial of SCS with a monopolar epidural electrode. Seventy-four (74) patients had a successful trial and underwent permanent implantation of the monopolar electrode used for the trial (19), or of a quadripolar electrode (53), or a Resume quadripolar electrode via laminotomy (2).

**Results:** Sixty point seven percent (60.7%) of patients underwent implantation of a permanent device and were followed for an average of 3.9 years (0.3-9 years). Early failure (within one year) occurred in 20.3% and late failure (after one year) in 33.8% of the 74 patients. Overall, 45.9% were still using SCS at latest follow-up, (SEE TABLE I). Successful SCS (greater than 50% reduction in pain for one year) occurred in 83.3% of FBS with nonspecific leg pain, 89.5% of FBS with limb pain associated with root injury, and 73.9% of nerve neuropathic pain. Spinal cord stimulation was less effective for the control of allodynia or hyperpathia than for spontaneous pain associated with neuropathic pain syndromes. It was also less effective for axial versus limb pain in

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# Calendar of Events

## Future CNS Annual Meeting Sites

2001	San Diego	September 29 - October 4
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



### 27 February-3 March 2002

#### American Academy of Pain Medicine 18th Annual Meeting

Location: Hyatt Regency @ Embarcadero  
Center, San Francisco, CA  
WWW: <http://www.painmed.org/>  
Phone: 847-375-4731  
Fax: 847-375-6331  
E-mail: [aapm@amctec.com](mailto:aapm@amctec.com)

### 14-17 March 2002

#### American Pain Society 21st Annual Meeting

Location: Baltimore Convention Center  
Baltimore, MD  
WWW: <http://www.ampainsoc.org/>

### 6-11 April, 2002

#### 70th AANS Annual Meeting

Location: Chicago, IL  
WWW: <http://www.neurosurgery.org/aans/index.html>  
e-mail: [info@aans.org](mailto:info@aans.org)  
Phone: 800-367-9286

### 17-22 August 2002

#### 10th World Congress on Pain

Location: San Diego, CA  
WWW: <http://halcyon.com/isap>  
e-mail: [isap@locke.hs.washington.edu](mailto:isap@locke.hs.washington.edu)

### 21-26 September 2002

#### 2002 Annual Meeting of the Congress of Neurological Surgeons

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

### 14-17 November 2002

#### Trigeminal Neuralgia Association 4th National Conference

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

### 18-23 February 2003

#### American Academy of Pain Medicine 19th Annual Meeting

Location: The Fairmont, New Orleans, LA  
WWW: <http://www.painmed.org/>

## Future AANS Annual Meetings

2002 Chicago, Illinois  
2003 San Diego, California  
2004 Orlando, Florida  
2005 New Orleans, Louisiana



FBS. Third party involvement did not influence outcome. There was a lesser incidence of surgical revisions when quadripolar leads were used than with monopolar electrodes, (SEE TABLE II).

**Conclusion:** Spinal cord stimulation is as effective for treating nonspecific limb pain associated with FBS as it is for neuropathic pain, including FBS with limb pain associated with root damage.

**TABLE I. Result of SCS by Diagnosis**

Diagnosis	Trial stimulation		Permanent implant				
	Total No	Success No(%)	Total No	Still using (a) No(%)	Early failure (b) No(%)	Late failure (c) No(%)	a+c No(%)
Disc disease non-neuropathic pain	21	14(66.7)	12	7 (58.3)	2 (16.7)	3 (25.0)	10 (83.3)
Disc disease neuropathic pain	25	21 (84.0)	19	11 (57.9)	2 (10.5)	6 (31.6)	17 (89.5)
Peripheral nerve neuropathic pain	33	23 (69.7)	23	10 (43.5)	6 (30.4)	7 (30.4)	17 (73.9)
Cord lesions neuropathic pain	20	7 (35.0)	7	2 (28.6)	2 (28.6)	3 (42.9)	5 (71.5)
Cauda equina neuropathic pain	5	4 (80.0)	4	2 (50.0)	1 (25.0)	1 (25.0)	3 (75.0)
Post-thoracotomy pain	4	2 (50.0)	2	1 (50.0)	0 (0)	1 (50.0)	2 (100.0)
Postherpetic pain	3	1 (33.3)	1	0 (0)	1 (33.3)	0 (0)	0 (0)
Amputation related pain	5	1 (20.0)	1	0 (0)	0 (0)	1 (100.0)	1 (100.0)
Complex regional pain syndrome type I	6	5 (83.3)	5	1 (20.0)	1 (20.0)	3 (60.0)	4 (80.0)
<b>Total</b>	<b>122</b>	<b>78 (63.9)</b>	<b>74</b>	<b>34 (45.9)</b>	<b>15 (20.3)</b>	<b>25 (33.8)</b>	<b>59(79.7)</b>

**TABLE II. Complications of SCS**

Complications	Monopolar(19) No.(%)	Quadripolar(53) No.(%)	Resume(2) No.(%)	Total(74) No.(%)
Infection	3 (15.8)	4 (7.5)		7 (9.5)
Migration	7 (36.8)	12 (22.6)		19 (25.7)
Lead breakage	3 (15.8)	2 (3.8)	1 (50.0)	6 (8.1)
Receiver failure	2 (10.5)	2 (3.8)	4 (5.4)	
Pain at receiver site	0 (0)	9 (17.0)		9 (12.2)
Non infectious inflammatory reaction at receiver site	1 (5.3)	5 (9.4)	6 (8.1)	
Incidence of surgical revision (patients)	13 (68.4)	13 (24.5)	1 (50.0)	27 (36.5)

**Percutaneous Electrode Implantation For Neuro-pathic Facial Pain. Technical Note**

Konstantin V Slavin, MD, Frank Hsu, MD, Zvi Israel, MBBS, Kim J Burchiel, MD, FACS (*Portland, OR*)

**Introduction:** Peripheral nerve stimulation has been successfully used for various neuropathic pain (NP) syndromes for more than 30 years. Although standard implantation technique involves placement of the electrode next to exposed peripheral nerve, a percutaneous electrode insertion technique was recently described for treatment of occipital neuralgia. A similar method of electrode insertion for stimulation of certain trigeminal branches was developed by the senior author (KJB) and subsequently used at two institutions. We describe details of this technique and discuss its benefits over other therapeutic approaches.

**Methods:** Chronic stimulation of the peripheral trigeminal branches may be indicated when medically intractable NP is caused by facial trauma or previous neurodestructive procedures. In order for stimulation to work, patients must have at least partially preserved sensation in the painful area. A standard quadripolar electrode is inserted percutaneously under fluoroscopic guidance in the subcutaneous plane, traversing the path of the nerve in question, (usually next to the appropriate foramen). The electrode is secured to skin and connected to an external screener. If a week-long trial is successful, this temporary electrode is replaced with a permanent electrode inserted in the same location and connected to a subclavicular IPG.

**Results:** This technique was successful in 5 patients with medically intractable NP with supraorbital (3) and infraorbital (2) distribution. All patients attained >50% pain relief with stimulation and decreased or cessation of narcotic intake.

**Conclusion:** Percutaneous technique of electrode implantation for chronic peripheral nerve stimulation may be used in selected patients with trigeminal NP with good or excellent long-term results.

**Inflammatory Granulomas Associated with Chronic Intrathecal Opioid Infusion**

Mark D Smith, MD, L Anthony Whitworth, MD, Claudio Feler MD, (*Memphis TN*), Timothy Jones, MD (*Nashville TN*)

**Introduction:** Inflammatory masses may result from chronic intrathecal infusion of morphine. These may be associated with a new pain syndrome and neurologic deficit. They seem to be inflammatory rather than infectious in nature, and once symptomatic, despite aggressive therapy, may result in significant neurologic disability.

**Methods:** We present a series of four patients receiving continuous intrathecal delivery of morphine who presented with a new pain disorder and neurologic deficit related to an inflammatory mass. Clinical history, examination, laboratory, and operative findings will be presented.

**Results:** All patients were receiving morphine at a concentration of 16 to 50 mg/cc. Two received clonidine, as well, and another received clonidine and marcadine. Onset of clinical symptoms ranged from 18 months to 12 years post implantation. At presentation, MR imaging and laboratory data to include CSF studies were obtained. Three of the four patients underwent operative exploration with resection of the inflammatory lesion. Each lesion occupied a different location within the spinal canal. One remained epidural, one occupied the intrathecal space entirely, while the other took an intradural and extradural location. The fourth patient was treated conservatively. All cultures have been sterile. Despite aggressive therapy with intravenous steroids, each patient has suffered significant neurologic deficit, and has required inpatient rehabilitation. Evaluation of medication processing techniques has been unrevealing, and no common link exists between this group, except for the presence of morphine.

**Conclusion:** Inflammatory masses may be associated with chronic intrathecal morphine therapy. Once symptomatic they may produce significant neurologic morbidity.

# Reinventing Neurosurgery 2001

Of Interest at the 51st CNS  
Annual Meeting September  
29-October 4, 2001  
San Diego, CA



## Full Day Practical Course

8:00 am - 5:00 pm Sunday, September 30

### PC21 Neuroaugmentation for Pain Control

Course Directors: Kenneth A. Follett, Richard K. Osenbach  
Faculty: Joel L. Seres, Ali R. Rezai, Jaimie M. Henderson, Samuel J. Hassenbusch, Robert M. Levy, Oren Sagher  
Learning Objectives: Upon completion of this course, participants will be able to explain the rationale for spinal cord stimulation, peripheral nerve stimulation, and spinal drug infusions for pain control; describe the patient selection process for neuroaugmentative pain control techniques; describe techniques for implantation and management of stimulation and infusion therapies; and describe complications, complication management, and outcomes of neuroaugmentative procedures for pain control.

## Scientific Program, Council of State Neurosurgical Societies

3:21 pm - 3:30 pm Monday, October 1

749 Mathematical Modeling of Cost Comparison between Inpatient and Outpatient Spinal Cord Stimulation Trials  
*Frank P. Hsu, Farhad Limonadi, Kim J. Burchiel*

## Scientific Program, Luncheon Seminar

12:30 pm - 2:00 pm Tuesday, October 2

### T32 Sympathetic vs. Neuropathic: Which Treatments for Which Types of Pain?

Moderator: Kenneth A. Follett  
Faculty: Andrew G. Shetter, Robert M. Levy, Philip L. Gildenberg, Claudio A. Feler  
Learning Objectives: Participants will be able to differentiate the pathophysiology between those two conditions as well as the treatment options currently available and discuss the advantages and disadvantages of each.

## Scientific Program, Section on Pain I

2:00 pm - 5:30 pm Tuesday, October 2

### Chronic Low Back Pain: Fuse, Infuse or Refuse?

Learning Objectives: Participants will be able to describe and contrast options available for the treatment of chronic low back pain associated with spinal disorders. Participants will be able to describe new basic and clinical developments relevant to the treatment of pain.

2:00 - 3:30 Open Papers 791-800

Moderator: Jeffrey A. Brown

## Ronald Tasker Award

2:00 pm - 2:09 pm

791 Percutaneous Retrogasserian Glycerol Rhizotomy in the

Management of Trigeminal Neuralgia Associated with Multiple Sclerosis

*Gwynedd E. Pickett, Gary G. Ferguson*

2:09 pm - 2:18 pm

792 Gamma Knife Radiosurgery (GKRS) for Treatment of Trigeminal Neuralgia: Long-Term Results

*Ronald F. Young, Deane B. Jacques, Rufus Mark, Brian Copcutt, Francisco Li*

2:18 pm - 2:27 pm

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

*Bruce E. Pollock, Loi K. Phuong, Deborah A. Gorman, Robert L. Foote, Scott L. Stafford*

2:27 pm - 2:36 pm

794 Gamma Knife Medial Thalamotomy for Treatment of Chronic Pain: Long-term Results

*Ronald F. Young, Deane B. Jacques, Rufus Mark, Brian Copcutt*

2:36 pm - 2:45 pm

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

*Martin E. Weinand, Istvan Takacs, Otto Ubrik*

2:45 pm - 2:54 pm

796 Comparison of Thoracoscopic Sympathectomy and Dorsal Column Stimulation for the Treatment of Complex Regional Pain Syndrome

*Kenneth M. Little, Matthew McGirt, Alan T. Villavicencio, John P. Gorecki*

2:54 pm - 3:03 pm

797 Outcomes Following Repeat Radiosurgery for Trigeminal Neuralgia

*Toshinori Hasegawa, Richard Spiro, John C. Flickinger, Douglas Kondziolka, L. Dade Lunsford*

3:03 pm - 3:12 pm

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

*Kim J. Burchiel, Robert J. Coffey*

3:30 - 4:00 Refreshments with Exhibitors

4:00 - 4:40 Oral Posters 170-182

Moderator: Jeffrey A. Brown

4:40 - 5:30 Special Symposium

Moderator: Jeffrey A. Brown

Speakers: Richard K. Osenbach, Joel L. Seres

## Scientific Program, Luncheon Seminar

12:30 pm - 2:00 pm

Wednesday, October 3

### W78 Trigeminal Neuralgia and Other Cranial Nerve Syndromes: Multimodality Approaches

Moderator: John M. Tew, Jr

Faculty: Peter J. Jannetta, Frederick G. Barker, II, Yves Keravel, Ronald Brisman, Joshua L. Dowling

Learning Objectives: This seminar will discuss the currently available treatment strategies for trigeminal neuralgia and

*cont on page 10*

neuralgias of the lower cranial nerves. Participants will be able to discuss the risks and the long-term efficacy of microvascular decompression, percutaneous rhizolysis procedures, and stereotactic radiosurgery.

## Scientific Program, Section on Pain II/General Interest

2:00 pm – 5:30 pm Wednesday, October 3  
Politics of Pain Care

Learning Objectives: Participants will be able to describe contemporary political issues that affect the delivery of care to patients with pain disorders and discuss the implications of these issues for the treatment of pain. Participants will be able to describe new basic and clinical developments relevant to the treatment of pain.

2:00 – 3:30 Open Papers 841-850  
Moderator: Jaimie M Henderson

2:00 pm - 2:09 pm  
841 Gamma Knife Radiosurgical Treatment of Trigeminal Neuralgia Associated with Multiple Sclerosis  
*Nicholas M Barbaro, Alain C de Lotbiniere, Mariann M Ward, NP, Jonathan Knisely, Penny K Sneed*

3:30 – 4:00 Refreshments with Exhibitors

4:00 – 4:40 Oral Posters 183-195  
Moderator: Jaimie M Henderson

4:40 – 5:30 Special Symposium  
Moderator: Jaimie M Henderson

4:40 – 5:30 Pain, Politics and Patient Care....Michael Ashburn

*chairman's message continued from cover*

Ashburn will touch on topics of interest to all physicians involved in the treatment of pain, including recent JCAHO requirements for pain treatment as well as developing standards in pain management. These topics are timely, since the JCAHO standards have been met with mixed feelings and a fair amount of controversy. I would urge all members of the Pain Section to attend this session, formulate opinions on these guidelines, and contact me by e-mail at [jmh@musu2.slu.edu](mailto:jmh@musu2.slu.edu) to make your voice heard.

As a section, we need to reenergize the field of neurosurgical pain management by continuing to "push the envelope" in ways that only neurosurgeons can: deep brain and motor cortex stimulation, sophisticated studies which combine functional imaging with invasive interventions, true measures of functional recovery from spinal procedures, and numerous other opportunities for clinical and scientific research. We need to concentrate on resident education in pain, emphasizing basic mechanisms and expanding treatment options for intractable pain. As neurosurgeons, we treat spinal pain and neuropathic pain as a matter of course in our daily practices. Each of us should be aware that every discectomy is "pain surgery" and that we need to strive for reliable outcomes measures. Toward this goal I think it is important that the Spine Section and the Pain Section work closely together to develop comprehensive recommendations for the treatment of spinal pain syndromes. I plan to enthusiastically pursue this collaboration during my term as Chairman of the Section.

This is an exciting time to be involved in the treatment of pain. As national awareness of pain and its treatment continues to grow, our opportunities to treat patients should grow commensurately. I am pleased and proud to have the opportunity to work with Vice-Chairman Oren Sagher, Secretary/Treasurer Kim J Burchiel, the members of the Executive Committee (John C Oakley, Richard K Osenbach, John P Gorecki, Ali R Rezai, and John Piper), and past Chairman Kenneth A Follett to help the Joint Section on Pain of the AANS/CNS become one of the leading voices in organized pain medicine.

Please contact any of us with questions, comments, or suggestions. With your help, we can ensure that the neurosurgical perspective continues to be represented at the local, national, and international levels.



Jaimie Henderson, MD

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## Forthcoming 2002

### Surgical Management of Pain

1008 pp, 500 illustrations (approx)  
hardcover

\$249.00 / DM 398.00

ISBN 0865779120 (the Americas)

ISBN 3131259817 (rest of the world)

Thieme New York, <http://www.thieme.com>



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. Forthcoming in 2002, Dr. Kim 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, MD is Professor and Chairman of the Department of Neurological Surgery, Oregon Health & Science University, Portland, Oregon.

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# Application for Membership



American  
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:  
AANS/CNS Section on Pain  
Department 77-7550  
Chicago, IL 60678-7550

**AANS/CNS Section on Pain**  
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