

neoSpine™ FINDINGS

As the nation's only outpatient surgery center company dedicated exclusively to spinal procedures, pain management, imaging and radiosurgery, NeoSpine has the most robust collection of clinical outcomes, operational, and financial data available. NeoSpine Findings offers a glimpse of the data shared by our network of leading spine surgeons.

Jeffrey Thramann, MD and Alan Villavicencio, MD are neurosurgeons and the founders of the Trigeminal Neuralgia Program. They specialize in the comprehensive treatment of brain disorders with an emphasis on minimally invasive and radiosurgical techniques.

Lee McNeely, MD is a radiation oncologist who has been the Medical Director for Rocky Mountain CyberKnife Program since February 2003.

Sigita Burneikiene, MD is a research associate and directs the clinical research aspects of the Trigeminal Neuralgia and other CyberKnife programs.

A group of physicians from the Boulder Neurosurgical Associates and Rocky Mountain CyberKnife Center (Boulder, CO) were granted The Best Presentation Award in the intracranial and spine section for their clinical study presented at the 2006 CyberKnife Users' Meeting. The annual meeting brought together over 400 of the world's leading radiosurgery specialists. The study titled Evaluation of CyberKnife Radiosurgery for Idiopathic Trigeminal Neuralgia: Multicenter Clinical Study analyzed various treatment parameters in order to achieve the best clinical outcome while minimizing complications. This recognition came as a result of the clinical and research team's collaboration with Stanford University and physicians from the Neuromed (Pozilli, Italy). The Trigeminal Neuralgia Program was created as an interdisciplinary program that provides state-of-the-art diagnosis and treatment for patients. The program offers a full spectrum of treatment options including conservative management, neurosurgical treatment and the most recent addition — CyberKnife radiosurgery. The Rocky Mountain CyberKnife Center is a leader in the field of radiosurgery and was recently recognized as the 7th busiest and experienced intracranial site worldwide.

EVALUATION OF CYBERKNIFE RADIOSURGERY FOR IDIOPATHIC TRIGEMINAL NEURALGIA: MULTICENTER CLINICAL STUDY

Villavicencio AT, MD; Lim M, MD; Burneikiene S, MD; Chang SD, MD; Romanelli P, MD; McNeely L, MD; McIntyre M, RN; Thramann JJ, MD and Adler JR, MD

Objective: CyberKnife radiosurgery offers the ability to deliver non-isocentric, conformal and homogenous radiation doses to non-spherical structures such as the trigeminal nerve. The safety and efficacy of CyberKnife radiosurgery for treatment of Trigeminal Neuralgia (TN) was evaluated.

Why NeoSpine?

Traditionally performed exclusively in hospital settings, radiosurgery offered in a private practice environment has been limited by the extraordinary investment required for equipment and expertise. NeoSpine provides a unique opportunity for physicians to offer this procedure in their own facility with minimal financial risk. Physician partners with NeoSpine have the freedom to deliver more complete services in an environment designed with their patients' needs in mind.

Methods: This was a multicenter retrospective analysis of patients treated for idiopathic TN between May 2002 and September 2004 at Stanford University (Stanford, CA), The Rocky Mountain CyberKnife Center (Boulder, CO) and Neuromed (Pozilli, Italy). Patients were evaluated for the level of pain control, response rate, time to pain relief, occurrence of hypesthesia and time to pain recurrence with respect to the length of the nerve treated and the maximal dose.

Results: 94.3% (49/52) patients experienced initial pain relief following treatment at a median time of 6.5 days. 85.7% (42/49) patients reported excellent pain control, 8.2% (4/49) reported moderate pain control and 6.1% (3/49) patients reported mild relief. Pain recurred in 20.4% (10/49) of the patients at a median of 5 months (range, 2 weeks to 8 months). At a mean follow-up of 10 months (range, 6 to 25 months) 75% (39/52) of patients had continued pain relief. Post treatment numbness occurred in 40.4 % (21/52) of patients. While the treatment dose did not correlate with outcome ($P = 0.6$), there was a statistically significant correlation between dose and post-treatment numbness ($P = 0.05$). There was also a correlation between outcome and the length of nerve treated ($P = 0.04$) and post-treatment numbness ($P = 0.0006$).

Conclusions: CyberKnife radiosurgery offers an effective and safe mode of treatment for TN with the added benefit of a quick response. Treatment dose and length of the nerve treated appears to correlate with post-treatment numbness, while outcome correlates with length of nerve treated and not the treatment dose. Recurrence rate was higher if lower doses were used. Larger studies are underway to confirm these findings.

**For more information, please contact Susan Pieper,
Chief Development Officer of NeoSpine, at 410-349-2406.**



40 Burton Hills Blvd., Ste. 320
Nashville, TN 37215
(615) 665-1847 Telephone
866-5NEOSPINE Toll Free
(615) 665-8228 Facsimile