



Stereotactic Radiosurgery

STEREOTACTIC RADIOSURGERY

- Stereotactic Radiosurgery is a minimally invasive or non-invasive technique for very precise delivery of highly focused radiation treatments to create a desired response (such as death of tumor cells) with minimal effect on normal surrounding tissue.
- The term "Stereotactic Radiosurgery" is actually a reference to the combination of advanced radiation tools and expertise with complex three dimensional ("stereotactic") surgical planning techniques and does not involve any "open" surgery at all.
- Stereotactic Radiosurgery, although initially designed for treatment of brain diseases, is now also used for treatment of tumors involving the spine and other organs.
- Brain and Spine radiosurgery procedures are performed by a multidisciplinary team that includes a Neurosurgeon, a Radiation Oncologist and a Medical Physicist. These practitioners have generally undergone special training and certification in Stereotactic Radiosurgery.

HOW IT IS DONE...

- Stereotactic Radiosurgery is an outpatient procedure generally done on an awake patient under local or no anesthesia.
- High resolution MRI and/or CT scans are used for creation of radiosurgery treatment plans. These images can be used alone or combined with other techniques such as PET scans to further refine targeting.
- Patients are immobilized for imaging and treatment delivery. Immobilization may be achieved using a head frame applied by a Neurosurgeon; a custom-made relocatable mouthpiece or a plastic facemask or other special devices.
- Traditionally, Neurosurgical Radiosurgery is performed in a single session. Newer techniques permit dividing treatments into multiple treatments (generally three to five), when treatment would be optimized by this approach.
- In most cases, patients may return to their usual activities on the same day or on the day following treatment.
- Stereotactic Radiosurgery may be used alone or in addition to other therapies such as surgery, embolization, "conventional" fractionated irradiation, chemotherapy and other medications.

SOME CURRENT APPLICATIONS OF NEUROSURGICAL STEREOTACTIC RADIOSURGERY

• INTRACRANIAL TUMORS

- Brain Metastases
- Meningiomas
- Acoustic Neuromas
- Trigeminal And Other Cranial Nerve Schwannomas
- Pituitary Adenomas
- Primary Brain Tumors (Glioblastomas, Ependymomas, Neurocytomas, Medulloblastomas)
- Glomus Tumors
- Sarcomas, Hemangiopericytomas
- Chordomas

• ARTERIOVENOUS MALFORMATIONS OF BRAIN AND SPINE

• PAIN

- Trigeminal neuralgia
- Glossopharyngeal neuralgia

• SPINAL AND PARASPINAL TUMORS

- Benign
- Malignant



X-Knife LINAC Radiosurgery (Weill Cornell)



Gamma Knife Perfexion (Columbia)



CyberKnife (Overlook and Stamford)

OUR TREATMENT LOCATIONS

- **Our patients may be treated in one of four locations:**
 - Stitch Radiation Oncology at NewYork-Presbyterian/Weill Cornell - LINAC "X-Knife" Radiosurgery
 - The Center for Radiosurgery at NewYork-Presbyterian/Columbia - Gamma Knife Radiosurgery
 - The CyberKnife at Overlook Hospital (Summit, NJ) - CyberKnife Radiosurgery
 - The CyberKnife Center at Stamford Hospital (Stamford, CT) - CyberKnife Radiosurgery

Contact Dr. Susan Pannullo's team to find out if Stereotactic Radiosurgery is a treatment option for your patient. To make an appointment, please contact 212-746-2438.



Weill Cornell Brain and Spine Center

October 2010 Vol. 2, No. 2

Editorial Board

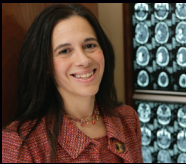
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Upcoming CME Activities and Other Events

MONTHLY COMPLIMENTARY CME LECTURE SERIES ON MULTIPLE SCLEROSIS HOSTED BY THE JUDITH JAFFE MULTIPLE SCLEROSIS CENTER

6:00pm – 8:30pm

October 20, 2010: What Can We Learn From Studying MS in Extreme Phenotypes?

November 17, 2010: Estrogen Receptor Ligands: A novel treatment for MS

December 15, 2010: Hippocampal Atrophy in MS

For more information and to register, visit our website at www.cornellneurology.org

SAVE THE DATE - 2ND ANNUAL NEW YORK SYMPOSIUM ON PARKINSON'S DISEASE

Saturday, October 23, 2010 - Weill Cornell Medical College – Uris Auditorium

A comprehensive update on management of Parkinson's Disease.

For more information and to register, visit www.cornellneurology.org

INDICATIONS AND CONTROVERSIES OF MINIMALLY INVASIVE SPINE SURGERY AND NAVIGATION: *HANDS-ON SYMPOSIUM*

Dec. 2, 2010; 12:00pm – 5:30pm

Dec. 3, 2010; 7:30am – 5:30pm

Dec. 4, 2010; 7:30am – 12:00pm

This symposium will provide a comprehensive overview on new and less invasive techniques with and without stereotactic navigation for the operative treatment of spinal disorders. *CME pending.*

For more information, please contact Jessica Grajales at jeg9059@nyp.org

RECOGNITION AND MANAGEMENT OF COMMON NEUROSURGICAL CONDITIONS IN THE PEDIATRIC PRACTICE

Wednesday, December 8, 2010, 9:00am - 3:30pm - Caspary Auditorium at Rockefeller University, New York, NY

A one day CME course designed to educate physicians and nurse practitioners about the common signs and symptoms of disorders that may need further evaluation by a pediatric neurosurgeon.

[A ground-up level educational seminar on how to first recognize these infrequent occurrences in the midst of a busy pediatric practice, how best to triage, when to image and when to send the child to an emergency room.] For more information, please contact Nicole Savage at njs2004@med.cornell.edu

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For more information on Stereotactic Radiosurgery or for a consultation, please contact Dr. Susan Pannullo at 212-746-2438.
Dr. Pannullo performs Stereotactic Radiosurgery for the Brain and Spine Center at Weill Cornell Medical College. She is one of the few neurosurgeons in the world with a neurological practice focused only on Stereotactic Radiosurgery and one of the few neurosurgeons in the country with access to both Gamma Knife and Linear Accelerator Radiosurgery.

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