AMAZING RECOVERY AND SURVIVAL WITH GAMMA KNIFE RADIOSURGERY

A patient with colon cancer and multiple metastatic brain tumors has survived since 2005 after Gamma Knife Radiosurgery. This is just one of our amazing success stories.

Brain metastasis from colorectal cancer is uncommon with incidence of 1.5 – 2.3 percent of all brain metastasis. The cerebellum is the most common area of colon cancer to brain metastasis and left-sided primary colon tumors predominate. Increased survival among patients with metastatic colorectal carcinoma will likely result in an increased incidence of brain metastases.

Whole brain radiotherapy survival ranges from 3–6 months. However, Gamma Knife Radiosurgery may result in a much higher survival rate and less brain toxicity. We treated such a patient at Northridge Hospital in 2005, who has remained fully functional with no identifiable brain lesion to date. This 77-year-old white male patient was first diagnosed with colon cancer in 1993 and treated with surgery and chemotherapy. He did well until early 2005 when he was found to have two enhancing brain lesions, including the left cerebellar tonsil measuring 21x19x16 mm and right parietal lobe measuring 11x12x14 mm with surrounding edema. The patient underwent Gamma Knife Radiosurgery at Northridge Hospital on June 30, 2005 and continues to remain under close observation.

The most recent MRI scan of the brain on November 12, 2009 revealed no identifiable metastatic tumor with 6–7 mm area of gliosis in the left inferior cerebellum, unchanged in the past four years. The original mass in this region measured 21 mm in diameter. The patient is fully functional and remains neurologically intact. Factors influencing survival include Karnofsky performance scale score over 70, status of systemic disease and total number of intracranial tumors and histological diagnosis. The dramatic survival of this patient is an example of the efficacy of Gamma Knife Radiosurgery versus whole brain radiation.

A 7-month follow-up MRI shows the complete disappearance of the right frontal tumor and a marked decrease in the size of the second tumor in the cerebellum and no evidence of new lesions.

GAMMA KNIFE RESEARCH UPDATE FOR BRAIN METASTASES

MD Anderson Cancer Center recently concluded a clinical trial published in Lancet Oncology detailing that stereotactic radiosurgery (SRS) alone is now the preferred treatment method for patients with newly diagnosed brain metastases. For the study, 58 patients with one to three brain metastases were randomized to receive SRS alone or SRS plus whole-brain radiation therapy (WBRT). The SRS+WBRT group experienced significant memory loss and, as a result, the study was halted early. In addition, possibly due to the fact that systemic therapy was postponed in the SRS+WBRT group, there was a significant difference in survival between the two groups. The median survival for patients in the SRS group was 15.2 months compared with 5.7 months in the SRS+WBRT group.

Conclusion: Gamma Knife Radiosurgery alone is the preferred treatment method for those with brain metastases. SRS alone provides excellent treatment for the brain metastases while allowing for continued systemic treatments without the side effects of whole brain RT, such as learning/memory deficit and alopecia.

BRAIN METASTASES FACTS

- Metastatic brain tumors far outnumber all other brain malignancies. In the U.S. 130,000 cancer patients develop brain metastases annually.
- Approximately 20 – 40 percent of patients detected with a primary cancer will develop a secondary cancer in the brain.
- Most brain metastases come from melanoma or cancers of the breast and lung.
- Brain metastases symptoms develop slowly and worsen over time. Common symptoms include headache, seizures, nausea, vomiting, vision or hearing problems, behavioral and cognitive symptoms, motor problems and balance difficulties.
- Tumors up to 3.5 cm in size can be treated.
- Gamma Knife can be repeated for new metastases.
- An 87 percent tumor control rate is seen with Gamma Knife in 3,033 published cases.
- Gamma Knife can be used in conjunction with surgery and whole brain radiation therapy.

Following Gamma Knife surgery, the tumor growth is stopped and the metastases shrink and usually disappear over time.

The Gamma Knife is the gold-standard in SRS with over 30 years of clinical experience and more than 185,000 patients with brain metastases treated worldwide. Neurosurgeons and Radiation Oncologists prefer Gamma Knife due to the benefits that it offers our patients including:
- Single dedicated machine to treat the brain
- >1,000 Peer Reviewed Journal Articles for brain metastases
- Non-invasive procedure completed in a matter of hours – outpatient recovery allows resumption of other systemic treatments
- Ability to treat multiple metastases during the same session
- Excellent control rate of > 90 percent in patients with renal cell or melanoma, tumors traditionally thought to be resistant to conventional radiation
- Reduced complications due to accuracy of <0.3mm