BAPTIST MD Anderson Cancer Center
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Stereotactic Radiosurgery

Stereotactic radiosurgery is a form of radiation therapy in which multiple beams of energy are aimed at a well-defined target. Each of the beams is low energy reducing the possible injury they can cause. However, the tumor (the target) where all the beams meet receives a high dose, which kills the tumor. No open surgery is involved in the treatment. There are several different machines that perform radiosurgery, which are often referred to by their brand name.

Who is involved in the treatment?

- **Radiation Oncologist** – A physician who specializes in radiation therapy and cancer
- **Oncologist** – A physician who specializes in the medical treatment of cancer
- **Medical physicist and dosimetrist** – work with radiation oncologist to create a treatment plan that best targets the tumor while reducing risk to normal brain
- **Nurses** - Prior to the procedure, a radiation oncology nurse assesses the patient, educates the patient and family about the procedure, and collaborates in the details of planning. On the day of treatment, the radiation oncology nurse provides care and monitoring throughout the day, and provides discharge instructions.

What are the advantages of radiosurgery?
Compared to open surgery, radiosurgery:

- Does not require an open surgical procedure or anesthesia
- Tumors that cannot be removed because of their location can be treated
- Can be used in patients who cannot have surgery
- Multiple lesions can be treated at the same time.
- There is less recovery time, which allows for rapid initiation of other therapies that may also be needed.

Compared to other types of radiation, radiosurgery is more focused. The exposure of normal tissue to radiation is reduced and side effects are less common.

Can patients treated with radiosurgery receive more radiation therapy in the future?

Yes, provided it is not in the exact same location. Patients who are treated with Radiosurgery can receive additional radiosurgery for other lesions in the future. Whole brain radiation can be given as well.

Who is a candidate for radiosurgery?

The most common situation for patients to be treated with radiosurgery happens when a cancer in the body has spread to the brain. Patients with a limited number of lesions (usually less than 5), that are small (the largest about 1 inch) and well defined are ideal candidates.

What are the risks of radiosurgery?

The risks of radiosurgery depend on the size and location of the lesion. Within hours or days of treatment, increased swelling around treated tumors may develop. As a result, patients may experience neurological symptoms such as vision changes, weakness, numbness, seizures or headaches. These can generally be treated with corticosteroids such as dexamethasone (Decadrone) or seizure medicines.

Over time, these symptoms typically resolve and these medicines may be discontinued. Symptoms should be reported to you treatment team.

Several months after treatment, patients may develop a type of brain injury referred to as necrosis. This may cause increased neurological symptoms. An MRI often shows changes that cannot be distinguished from growth of the underlying tumor. Often, patients are treated with corticosteroids (dexamethasone, Decadron) and followed with additional MRIs. However, depending on the situation, surgery may be required to relieve symptoms or make the diagnosis.