



Sharper Stereotactic Radiosurgery

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WARF: P130196US01

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an optimized waveguide that directs precision radiation doses and can be used with any conical-based collimator.

Overview

Radiosurgery is a non-invasive procedure that degrades tumors and other unhealthy tissue with high-energy beams of radiation. To spare surrounding tissue, it is critical that irradiation is precisely targeted. To this end, stereotactic radiosurgery of brain lesions uses a device called a collimator, which is made of a dense metal that blocks all but the radiation passing through a small bore hole.

Even with the use of collimators, radiation beams become partially diffused and undergo blurring. In other words, healthy tissue gets exposed. A new complementary device is needed to 'sharpen' the radiation beam and improve dose uniformity within the target volume.

The Invention

UW-Madison researchers have developed a waveguide for use with conical radiosurgery collimators. The waveguide can be installed inside the collimator's bore hole. Resembling a collection of hypodermic needles, the waveguide is made of concentric spacers and hollow cylinders. Its optimized design cuts down on beam blurring and directs radiation into a target volume with high precision.

Applications

- Stereotactic radiosurgery systems that employ conical-based collimators
- Treating brain metastasis and cancerous brain lesions
- Treating meningioma tumors, arterial venous malformations, trigeminal neurological pain and other conditions treated with radiosurgery

Key Benefits

- Significant reduction of spillage radiation
- More uniform dose distribution
- Improved dose gradient – 20 percent improvement with current prototypes
- Device is analogous to a sharper knife.
- Enables a more accurate treatment plan for patients
- Can be seamlessly integrated into existing equipment

Stage of Development

The development of this technology was supported by WARF Accelerator. WARF Accelerator selects WARF's most commercially promising technologies and provides expert assistance and funding to enable achievement of commercially significant milestones. WARF believes that these technologies are especially attractive opportunities for licensing.

Additional Information

For More Information About the Inventors

- [Edward Bender](#)

Tech Fields

- [Radiation Therapy : External beam therapy.](#)

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846