



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

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WARF believes that these technologies are especially attractive opportunities for licensing.

Tech Fields

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

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

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