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May 25, 2005. 06:43 AM

## Cancer fight given cutting edge

### Gamma Knife sends radiation beam into brain

### Destroys lesions and tumours without incisions

LESLIE FERENC  
STAFF REPORTER

A revolutionary surgical tool for Ontario patients with brain tumours and disorders is giving new meaning to going under the knife.

Called the Gamma Knife, it can destroy even the most deep-seated tumours and lesions without scalpels or incisions, using 201 beams of low-level radiation. When they converge on the abnormal tissue, the beams produce a precise and powerful shot of radiation that can over time stop the growth and even destroy benign and malignant tumours.

Available in the United States for several years and more recently at two Canadian hospitals in Winnipeg and Sherbrooke, Que., the 22.5-tonne "knife" arrived at Toronto Western Hospital yesterday. It was hoisted by crane to the new third floor for installation in the Krembil Neuroscience medical imaging centre.

Eligible patients with treatable conditions such as surgically inaccessible arteriovenous malformations (abnormal blood vessel masses), difficult brain tumours, drug-resistant movement disorders, pain and even epilepsy will have a choice between traditional surgery — involving hours on an operating table followed by lengthy recuperation and risks of infection and

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bleeding — to a relatively painless, non-invasive procedure that takes only a few hours and has them home the same day.

For neurosurgeon Dr. Mark Bernstein, co-director of the Gamma Knife centre at Toronto Western, it means no admissions, no anesthesia and no surgery.

"It's a no-brainer," he often tells his colleagues.

The surgery wasn't an option for Henry Kitts, who in 1981 was diagnosed with acoustic neuroma — a benign tumour that touched his brain and affected the functions of the inner ear. Left untreated, the condition was life-threatening. His only alternative at the time was 16 hours of delicate neurosurgery that resulted in hearing loss and facial paralysis.

He and doctors were shocked some 20 years later when lightning struck twice and his wife, Maureen Shaughnessy Kitts, was diagnosed with the same condition. By then, the treatment and surgery was well entrenched south of the border and Shaughnessy Kitts admits she didn't think twice about what to do.

"I was one of the lucky ones," she said referring to the availability of the treatment.

"Having lived with someone who had the neurosurgery, I wanted to tackle (the tumour) with the Gamma Knife."

Though the option was there, the procedure wasn't available in Canada at the time. It meant she had to travel to Rhode Island for her surgery in March, 2002. The province paid for the treatment.

As founders of the Acoustic Neuroma Association of Canada, the couple was passionate about the alternative surgery and making it available to Ontario residents.

"We felt strongly that the Gamma Knife would be a viable alternative because it was non-invasive and stopped the growth of, or in some cases, shrunk tumours without the medical deficits of neurosurgery," she said.

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**'I was one of the lucky ones'**

***Maureen Shaughnessy Kitts, who went to the U.S. for Gamma Knife neurosurgery***

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More than three years later, MRIs every six months confirm her tumour hasn't grown "and is showing distress in the centre," meaning the treatment has started to attack the blood vessels that feed the tumour.

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"As long as it doesn't grow, I consider myself fine."

Shaughnessy Kitts knew the treatment would make a difference in the lives of others and offer new hope to patients.

"We knew the Gamma Knife was important for this province," she noted.

It's why she began helping raise the \$7 million needed to bring the equipment to Western's state-of-the-art imaging centre, which is both a clinical and research facility.

Dr. Cynthia Ménard, clinical co-director for radiation oncology at Princess Margaret Hospital and co-director of the Joey and Toby Tanenbaum Family Gamma Knife Centre, said about 300 patients are expected to be treated annually.

The equipment is to be up and running in early September with patient referrals starting in July.

Toronto Western was selected as the location for the knife because it is the neurosurgical and neuroscience centre for the University Hospital Network. The Gamma Knife surgery will be available for all Ontario residents.

The machine is specially designed for use on the brain and neck area. The radiation dose is tailored to the needs of each patient by a specialized medical team including a radiation oncologist, neurosurgeon, neuroradiologist, medical physicists, radiation therapists and nursing staff. Accuracy is under a millimetre.

The length of the actual treatment is between 15 minutes to an hour depending on the type of tumour and location.

With the addition of the Gamma Knife, the University Health Network (UHN), which also includes the Toronto General Hospital, "has all the tools in place to deal with any neurological disorder that affects the brain," Ménard said.

"The Gamma Knife is one of the pieces of the puzzle that puts the UHN in the forefront."

Researchers are also looking at using the technology to treat epilepsy and Parkinson's.

"For patients who can benefit, the Gamma Knife provides them with an opportunity they didn't have before," Ménard added.

"It provides them with a non-invasive form of treatment that's close to home."