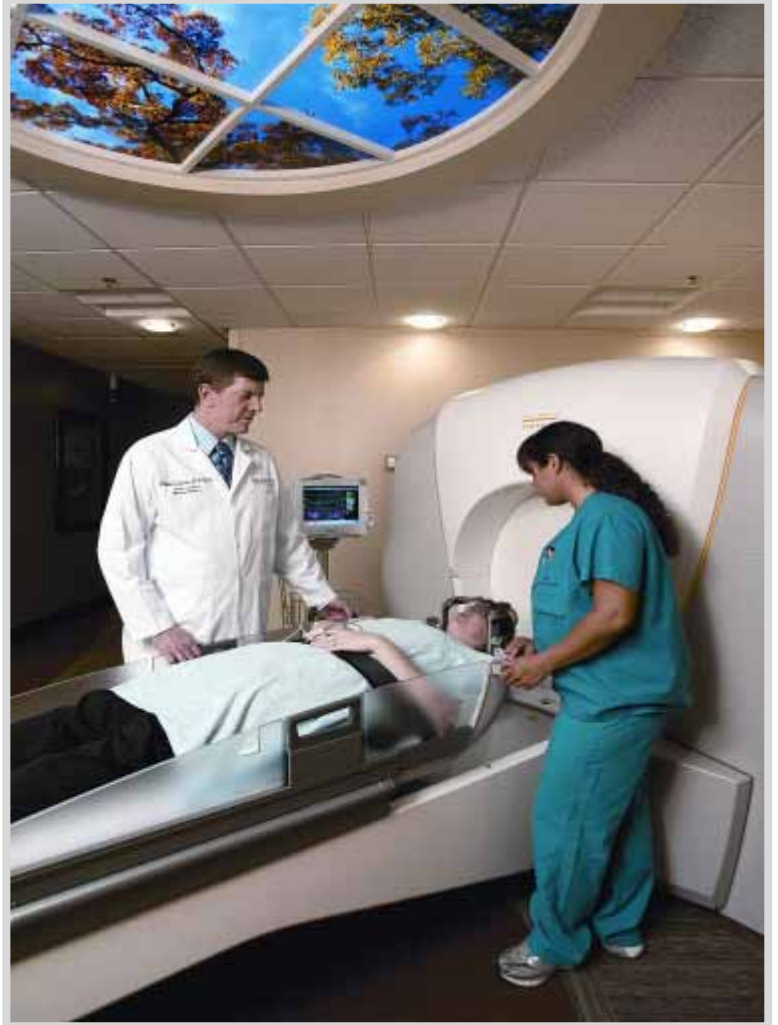


## Brain Surgery Without the Knife – Gamma Knife Radiosurgery

Using the Leksell Gamma Knife®  
PERFEXION™

We are happy to report the ongoing success of the Southern California Regional Gamma Knife Center at SACH. Together with the assistance of our physicians we are delivering the very latest technology in the treatment of neurosurgical-related problems to our community.



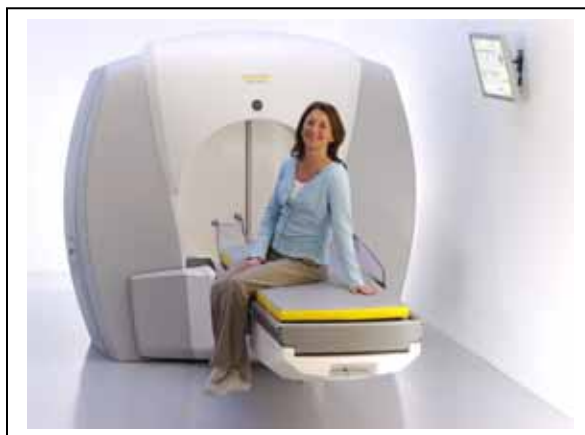
*The Leksell Gamma Knife® PERFEXION™ at the Southern California Regional Gamma Knife Center at San Antonio Community Hospital.*

### WHY WAS GAMMA KNIFE TECHNOLOGY SELECTED?

1. Best dosimetry performance
2. Sophisticated software
3. Best in class radiation protection for patients and staff
4. State-of-the-art technology

Neurosurgeons are using Gamma Knife Radiosurgery (GKS) since it has become the world's most widely-used stereotactic radiosurgical treatment for brain disorders, using Cobalt 60 to deliver the high energy radiation dose to its target. It has various applications as a result of its accuracy and reduced radiation exposure to other areas of the body. It has a proven record of safety and extensive literature of more than 2,000 published articles regarding its use to treat the neurosurgical problems encountered in some patients. This latest technology has allowed us to perform fast, safe, and "bloodless surgery" in a single dose treatment protocol. <http://www.irsa.org>

*Gamma Knife Radiosurgery allows most patients to go home the same day of treatment with minimal discomfort. We will continue to strive to be a center of excellence for neurosurgery.*



## INDICATIONS FOR GAMMA KNIFE

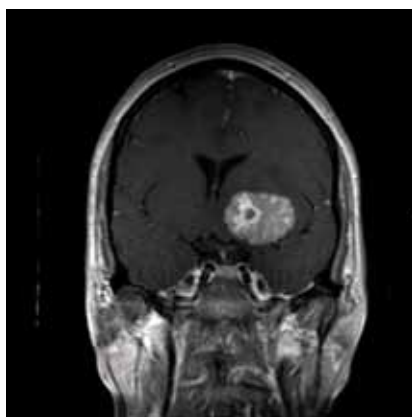
To date, we have treated 85 cases with GKS at SACH. Our current indications are the same as listed with the International Radio-Surgery Association.

<http://www.irsa.org>

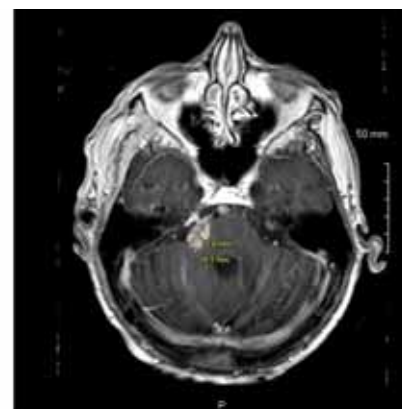
Our current indications:

1. Metastatic Brain Tumor
2. Meningioma
3. Pituitary Tumor
4. Glioma/Astrocytoma
5. Oligodendroglioma
6. Acoustic Neuroma
7. Trigeminal Neuralgia
8. AVM (Arteriovenous Malformation)
9. Some Childhood Tumors

Surgeons will determine if the tumor is too large and may need classical surgical approach before Gamma Knife Surgery should be considered. Patients can typically be treated with GKS if the tumor is less than 3 centimeters in size.



*Fig. 1 Metastatic brain tumor > 3 cm*



*Fig. 2 Tumor near brain stem < 3 cm*

## GAMMA KNIFE RADIOSURGERY - GKS

## CASE REPORT # 1

A 90 year-old patient was suffering severe facial pain and was not responding to his medications. He was referred for possible surgical treatment, although there is a very good invasive neuro-surgical approach for this problem. Due to his age, he was not able to undergo an open surgical procedure and GKS was an excellent option. He had a history of severe left facial pain c/w trigeminal neuralgia. He did not respond to Neurontin and continued to have severe sharp lancinating pain primarily in the first division of the trigeminal nerve and secondary spread to the second division. The pain was "lancinating" in nature, exacerbated with minimal touch around his upper cheek and the left corner of his eye. No facial numbness and no visual problems. No headaches, nausea, or vomiting. No hearing deficits. No weakness or previous history for strokes. He had exhausted the use of medications, and had tried Neurontin and Tegretol, but with increasing medication doses he had side effects of balance difficulties, stumbling and dizziness.

## TREATMENT

He received his treatment of 30 minutes in the Gamma Knife Center and within 6 weeks he felt pain free! On his last office visit he was very happy with the results of his Gamma Knife Radiosurgery and has since stopped taking his medication.

## CASE REPORT #2

*Right Trigeminal Neuralgia*

Mrs. Salcedo suffered with severe chronic right facial pain triggered by light touch to the cheek or upper lip. She had trigeminal neuralgia for more than 5 years. She was successfully treated with GKS after she had failed best medical management. She was getting to the point that she had episodes of severe pain occurring even with high doses of Tegretol. The patient's symptoms prevented her from maintaining good dental hygiene. The symptoms seemed to effect primarily the second and third divisions of the trigeminal nerve. No history for visual disturbances. She was in misery, even with morphine pain medication. Nine months after GKS, she is now pain free.

## CASE REPORT #3

*Brain Tumor*

Mrs. Guadalupe Nunez had two previous craniotomies for recurrent meningioma and the second surgery was believed to have achieved gross total resection of tumor involving the superior sagittal sinus, which was "ligated and tumor was removed." In fact, the tumor recurred. She was an excellent candidate for GKS.

She had an excellent response with GKS and no discomfort or complications. She was discharged home the same day of her treatment without discomfort. She has not had any side effects from her treatment and avoided an open operation. She was seen recently in the office and remains in good spirits. She will be followed at six and 12 months for tumor surveillance.

STATISTICAL DATA FOR SACH 2009

TUMOR TYPE	NUMBER OF CASES
METASTATIC TUMORS (mostly lung and breast)	29
MENINGIOMA	24
ACOUSTIC, SCHWANNOMA, NF	9
GLIOMA, ASTROCYTOMA, OTHER	8
PITUITARY TUMOR	4
TRIGEMINAL NEURALGIA	10
AVM	1
TOTAL	85

CENTER OF EXCELLENCE AT SAN ANTONIO COMMUNITY HOSPITAL

The Southern California Regional Gamma Knife Center at SACH has reported no complications directly related to the treatment of our patients and patients have been treated with all safety measures addressed. We have also had superior expertise in cooperation with our anesthesiologist for a few cases requiring general anesthesia in pediatrics.

Our center has handled a variety of neurosurgical problems ranging from metastatic brain tumors and meningiomas, to childhood brain tumors and Trigeminal Neuralgia. We look forward to adding other cases in the future with the support of our physicians who have encouraged us to achieve the highest quality of care at San Antonio Community Hospital. For more information about referring patients to the Center, please call 877.428.7224.

Jose L. Rodriguez, MD FACS

Next meeting for the Gamma Knife Society:



15th International Meeting of  
Leksell Gamma Knife® Society  
May 16-20, 2010, Athens