NCCI
Neurospinal & Cancer Care Institute
M. HASHIM MEMORIAL TRUST

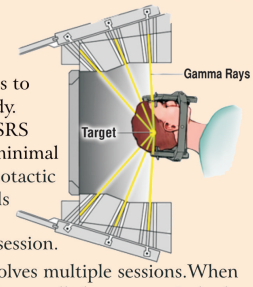
EXCELLENCE IN CANCER CARE

PAKISTAN GAMMA KNIFE & X-KNIFE RADIATION ★ PET CT & PET-GUIDED RADIOTHERAPY ★ NEUROSPINAL & MEDICAL SERVICES

Newsletter

STEREOTACTIC RADIOSUGERY OVERVIEW

Gamma Knife stereotactic Radiosurgery Unit



Stereotactic radio-surgery (SRS) uses many precisely focused radiation beams to treat tumors and other problems in the brain neck and other parts of the body. It is not surgery in the traditional sense because there's no incision. Instead, SRS uses 3-D imaging to target high doses of radiation to the affected area with minimal impact on the surrounding healthy tissue. Like other forms of radiation, stereotactic radiosurgery works by damaging the DNA the targeted cells. The affected cells then lose the ability to reproduce, which causes tumors to shrink.

Stereotactic radiosurgery of the brain and spine is typically completed in a single session.

Body radiosurgery is used to treat lung,liver, adrenal and other soft tissue tumors, and treatment typically involves multiple sessions.When doctors use stereotactic radiosurgery to treat tumors in areas of the body other than the brain, it's sometimes called stereotactic body radiotherapy (SRBT) or stereotactic ablative therapy (SABR).

Types of stereotactic radiosurgery

Gamma Knife targeting

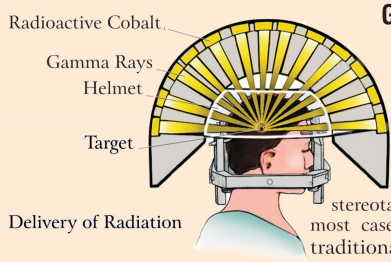
Doctors use three types of technology to deliver radiation during stereotactic radiosurgery.

Linear accelerator

(LINAC) machines use X-rays (photons) to treat cancerous and noncancerous abnormalities in the brain and other parts of the body. LINAC machines can perform SRS in a single session or over three to five sessions for larger tumors, which is called multi sessions stereotactic radiosurgery. Most common machines are SYNERGY-S Versa-HD, Novalis Tx and TrueBeam. Gamma Knife machines use 192 or 201 small beams of gamma rays to target and treat cancerousand noncancerous brain abnormalities.

Gamma Knife machines are less common than LINAC machines and are used primarily for small to medium tumors and lesions in the brain associated with a variety of conditions.

Proton beam (charged particle radiosurgery) is the newest type of stereotactic radiosurgery and is available in only a handful of research centers in the U.S. It can treat brain cancers in a single session using stereotactic radiosurgery or use fractionated stereotactic radiotherapy to treat body tumors over several sessions.



Gamma Knife Delivery of Radiation

How it Works

All types of stereotactic radiosurgery and radiotherapy work in a similar manner. The specialized equipment focuses many small beams of radiation on a tumor or other target. Each beam has very little effect on the tissue it passes through, but a targeted dose of radiation is delivered to the site where all the beams intersect. The high dose of radiation delivered to the affected area causes tumors to shrink and blood vessels to close off over time following treatment, robbing the tumor of its blood supply. The precision of stereotactic radiosurgery means there's minimal damage to the healthy surrounding tissues. in most cases, radiosurgery has a lower risk of side effects compared with other types of traditional surgery of radiation therapy.

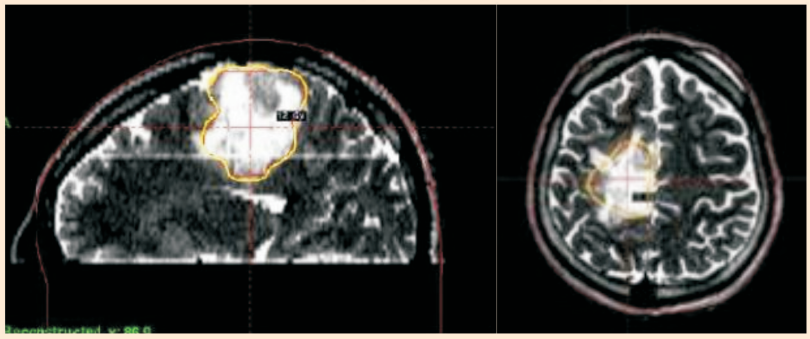
Gamma Knife Radiosurgery for Low Grade Glioma: Case Report and Five Years Followup Up.

This 25 years old gentleman, presented on July 2011, with progressive left foot drop, since several months.. He also had two episodes of tonic clonic fits with loss of consciousness, in third week of July 2011. Clinical examination revealed grade 3-4 / 5 power in left foot. MRI brain showed abnormal signal intensity mass in right parietal lobe, which was of low signal on T1, and high signal on T2 and proton density sequences. There was no enhancement on post contrast study. MR spectroscopy revealed high choline levels. Findings were suggestive of Low Grade Glioma. He had Gamma knife Radiosurgery with following prescription.

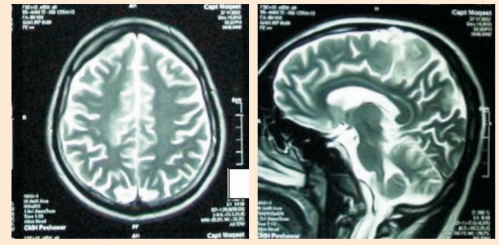
Target	Location	Prescription	Volume
A	Right Parietal Glioma	12 Gy @ 50%	32.1 CM^3

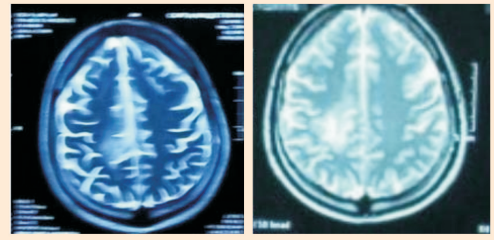
Multiple isocenter with 18 & 8 mm collimator used in APS mode. Patient has discharged on tapering doses of dexamethasone. Patient was followed up clinically and radiologically with 6 monthly MRI scans. The fits were gradually controlled and patient still has left foot drop. The MRI scans showed gradual but rapid decrease in size of high signal intensity lesion in 6 and 12 months follow up. The resolution has persisted since then and the last follow at 5 years post gamma knife shows only small area of hyper intensity signal in right parietal region on T2WI suggestive of excellent control of low grade glioma.

At the Time of Treatment planning on Gamma knife July 2011.



2012 at One Year of Followup





2014 at Three Years of Followup

2016 at Five Years of Followup

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VMAT – Fan Shaped Beam Planning Display

We are presenting a case of metastatic Hepatocellular carcinoma diagnosed in 2012 and was treated with Multisession radiosurgery and had an excellent local control till 2015, when he developed new metastatic lesions in right 9^{th} rib and sorefinib was stopped, while liver lesion was stable. A month back he developed severe left neck and bilateral pulmonary mets, also increase size of right rib lesion. PETCT report showed liver lesion to be increased from 2.7 cm to 3.7 cm but no FDG uptake.

ECOG:0, he had complain of left neck pain and was only controlled with Morphine sulphate 30 mg BD.

Left neck lesion was irradiated and pain improved during the XRT. Morphine dose reduced to 30 mg daily. Rt rib metastases was planned with VMAT-Fan Shaped Beam Planing 8 Gy x 3 Fr @ 70 % isodose line. (Fig1, Fig2, Fig3)

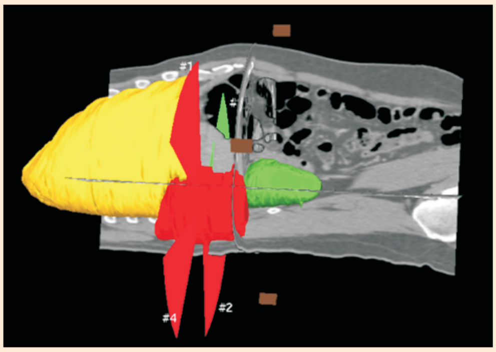


Fig-1- Fan Shaped Beam Planning with CT Images

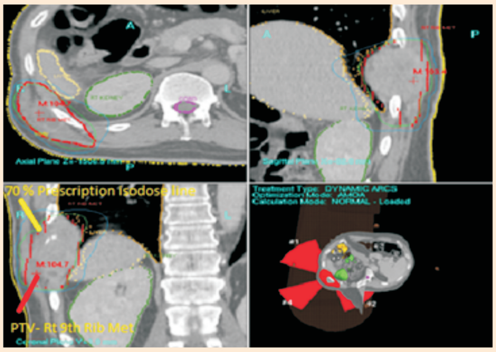


Fig-3- Three Dimensional view of Fan Beam Shaped Planning of VMAT.

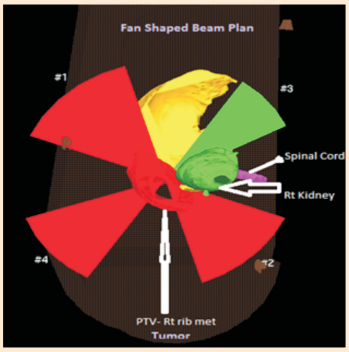


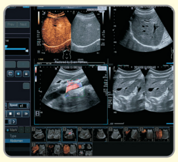
Fig-1- Fan Shaped Beam Planning display

NCCI, is providing excellent ultrasound and echocardiography service through new ultrasound and color doppler machine "Toshinba Xario 200"

Today's healthcare environment is challenging. Xario™ 200 meets clinical demands with outstanding versatility, flexible workflow and consistent, high-quality imaging performance.

Designed to minimize operator stress and to increase efficiency, Xario's lightweight transducers feature outstanding clinical versatility, ergonomic shapes and thin, super-flexible cable.

Xario 200 smart cable management system helps you make an end to tangled wires and lets you move the system easier and safer.



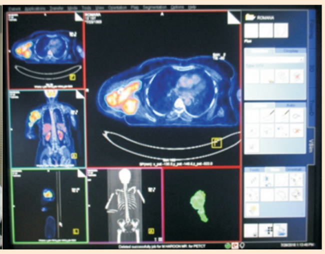
Xario 200 unique imaging technologies provides better image quality. All functions work hand in hand with other imaging modes for even greater uniformity within each applications.

PET CT/SCAN

PET/CT guided Radiosurgery & Radiotherapy Planning with flat table introduced first time in Pakistan at Nuerospinal & Cancer Care Institute - NCCI

PET/CT is increasingly being used for the medical imaging of both metabolic and anatomic features. PET/CT is accepted modality for diagnosis, staging, and assessment of tumor response in various types of cancer. There in growing data about the use of PET/CT vs. other imaging techniques for radiotherapy planning. The evaluation of PET/CT images is beneficial for accurate delineation of target volumes in radiotherapy. By employing PET/CT information with the capabilities image co-registration and threshold segmentation, radiotherapy planning become highly accurate. PET/CT images acquired on a dual scanner in the radiotherapy treatment position after administration of tracer according to a standardized protocol. Thin allows for proper contouring of biological tumor voulume along with provision of anatomic detail at the RT planing system. PET will play an increasingly valuable role in RT planning for a wide range of cancers. When requesting PET scans, physicians should be aware of their potential role in RT planning.

PET/CT with Flat table and Laser Light



PET/CT Radiotherapy Planning

Upcoming Project

The Trust has bee providing free services which has been subjected on availability of funds and more patients have been able to avail the opportunity to be treated by the world's most advanced technology free but still there are much more needy patients waiting for availing the opportunity.

Our aim to run a state-of-the-art mini cancer hospital with all facilities under one roof in this connection we are now having beds comprises of male, female and children with emergency, high dependency unit & ICU having all necessary facilities. The hospital therefore requires donors who must be willing to be a part of this expansion and make a contribution which will benefit them not only during this life time but in the hereafter as well.

Sponsor a Patient

H.Hashim Memorial Trust requires individual and corporate sector donors who can also help poor patients by directly undertaking the responsibility of sponsoring treatment of poor patients partially or fully. The average cost of treatment per month is **Rs.50,000/-**

Patient Workload

PET SCAN	SYNERGY	GAMA KNIFE
1650	1125	1399

OUR PROJECTED NEED FOR 2015-2016 Rs.100 MILLION

NEUROSPINAL & CANCER CARE INSTITUTE
EXCELLENCE IN CANCER CARE

INTRODUCTION

Cancer is the most common cause of death in South East Asia and every country is trying to eradicate cancer by preventive measures, early diagnosis and proper treatment including surgical, safe radiation and chemotherapy. Unfortunately very inadequate measure have been taken in public or private sector in Pakistan. Centers fighting cancer are less in number and having inadequate facilities to fight cancer.

In order to provide the quality cancer treatment for everyone with the latest technology. The M. Hashim Memorial Trust (MHMT) was established and registered with the Government of Sindh in 1990 to serve humanity and determined to serve the community by offering free complete cancer treatment to the underprivileged cancer patients. We are providing free consultation surgical treatment or biopsy, stereotactic radiosurgery & radiotherapy and chemotherapy.

Services Providing at Neurospinal & Cancer Care Institute:

Neurospinal & Cancer Care Institute started with only 10 beds and now Alhamdulillah we are having 50 beds with all infrastructure and basic diagnostic facilities for cancer: under the umbrella of the Trust has taken a step against cancer like CTscan(64 slice/sec), MRI open MRI 1.5T and PET CT Scan (64 slice) which is the world over state of art technology to detect early cancer, spread of cancer, response to treatment by radiation or chemotherapy. There is one window registration for all poor patients with cancer without any discrimination of caste & creed or ethnicity to avail all facilities free of cost.

ایم ہاشم میموریل ٹرسٹ

ہمارے معاشرے میں کینسر ایک عام موت کی وجہ بن چکا ہے۔ اور جنوب مشرقی ایشیاء اور بیشتر ممالک میں حفاظتی اقدامات کا فوری تشخیص محفوظ تابکاری اور کیموتھراپی سمیت مناسب علاج کی طرف سے کینسر کے خاتمے کے لئے کوشش کررہے ہیں۔ اسکے ساتھ ساتھ پاکستان میں بہت ناکافی اقدامات پائے جاتے ہیں جو کہ کینسر کے علاج کے لئے ناکافی ہیں۔

ایم ہاشم میموریل ٹرسٹ انسانیت کی خدمت کے لئے 1990 میں حکومت سندھ کے تحت رجسٹرڈ کیا گیا ہے۔ ایم ہاشم میموریل ٹرسٹ غریب اور مستحق مریضوں کے لئے مناسب اور جدید علاج کی فراہمی کررہا ہے جس میں مفت طبی مشاورت، سرجیکل علاج، ریڈیو سرجری اور کیموتھراپی شامل ہیں۔

ہماری فراہم کردہ خدمات

نیورو اسپائنل اور کینسر کیئر انسٹیٹیوٹ کی بنیاد صرف دس بستروں سے کی گئی تھی اور اب الحمدللہ پچاس بستروں پر مشتمل ایک مکمل انفرااسٹرکچر سے آراستہ ہسپتال بن چکا ہے۔ ایم ہاشم میموریل ٹرسٹ کے تحت PET-CT Scan 64 Slice, MRI 1.5, MRI Open, CT Scan 64 Slice جیسی مشینیں مریضوں کے لئے موجود ہیں۔ جو کہ دنیا میں مہنگی اور معیاری مشینیں سمجھی جاتی ہیں اس ادارے میں کینسر کی جلد تشخیص، کینسر کی روک تھام اور کیموتھراپی بھی جلد ٹائم فریم پر کی جاتی ہے۔

ہم اس ادارے کے تحت بلاتفریق تمام غریب، مستحق مریضوں کی زندگی میں دیئے روشن کررہے ہیں۔

2015-2016 میں ہمارے اہداف

مستحق مریضوں کا علاج کرنے کے لئے سال 2015-2016 میں 10 کروڑ روپے کی ضرورت ہے۔

ایک مریض کے ماہانہ علاج کا خرچ تقریباً 50 ہزار روپے ہے۔

آپ کا تعاون؟

ایک عشرے سے زائد عرصے پر محیط اہل درد کا تعاون ہی ہمارے حوصلوں کو مہمیز دیتا ہے۔ آپ کی زکوٰۃ کو شریعت کے عین مطابق استعمال کیا جاتا ہے۔

اپنی زکوٰۃ اور عطیات ایم ہاشم میموریل ٹرسٹ کو دیجئے

ہمیں اُمید کے اس سفر میں مالی اعانت کی اشد ضرورت ہے۔ ہم آپ کی دی ہوئی امانت کو جواب دہی کے احساس کے ساتھ نہ صرف خرچ کرتے ہیں بلکہ دنیاوی تقاضے کو مدنظر رکھتے ہوئے ہر سال مستند چارٹرڈ اکاؤنٹنس سے اکاؤنٹ آڈٹ کرائے جاتے ہیں۔

اپنی زکوٰۃ اور عطیات
ایم ہاشم میموریل ٹرسٹ کو دیجئے

All Expenses are covered by your **ZAKAT & DONATIONS**

How Can you Support M. Hashim Memorial Trust-MHMT

Zakat: We have social welfare system where each patient is properly assessed with respect to Zakat eligibility, which is only used for zakat eligible patients.

Donation: We have received to serve the needy patients by not only providing them with quality health but also purshasing medical equipment and for administrative expenses of the Trust.

Donation In-kind: You can donate medicines, medical equipment, foods and other accessories.

HOW TO SEND ZAKAT & DONATIONS

You can mail a cross cheque in favour of M. Hashim Memorial Trust or deposit in our account:

BANK NAME: BANK AL HABIB
Account Title: M.Hashim Memorial Trust
Account.#. 1008-0081-003560-01-8 IBAN: PK57BAHL1008008100356001
Swift Code: BAHLPKKA
Branch Address: Godrage Kandawala Building, M.A. Jinnah Road, Karachi.

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