Newsletter April 2017

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

In this Issue

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Leksell Gamma Knife Icon introduces a broader take on precision. Integrated immobilization, workflow and imaging technologies mean greater clinical flexibility and enhanced everyday efficiency and that translates into more patients receiving the best brain care possible.

Whichever cranial condition treat with gamma knife "Icon", unrivaled precision is achieved. That applies to both frame-based and frameless immobilization.

Born of a profound care for patients with cranial disorders, every detail of Leksell Gamma Knife Icon was designed with the patient in mind.

Care for the brain

Because the brain is exceptionally sensitive, extra care must be taken when treating it.

Leksell Gamma Knife is the creation of neurosurgeon Professor Lars Leksell who, in search for better methods for treating the brain, invented stereotactic radiosurgery. Inspired to develop an effective and gentler alternative to open surgery, Professor Leksell developed Gamma Knife as a dedicated tool, capable of delivering a highly accurate therapeutic dose of radiation to the brain while minimizing the impact on the patient's normal brain tissues.

Gamma Knife Evalution

1968 Prototype
1 Collimator helmet
Slit beams
Max 1 Isocentre

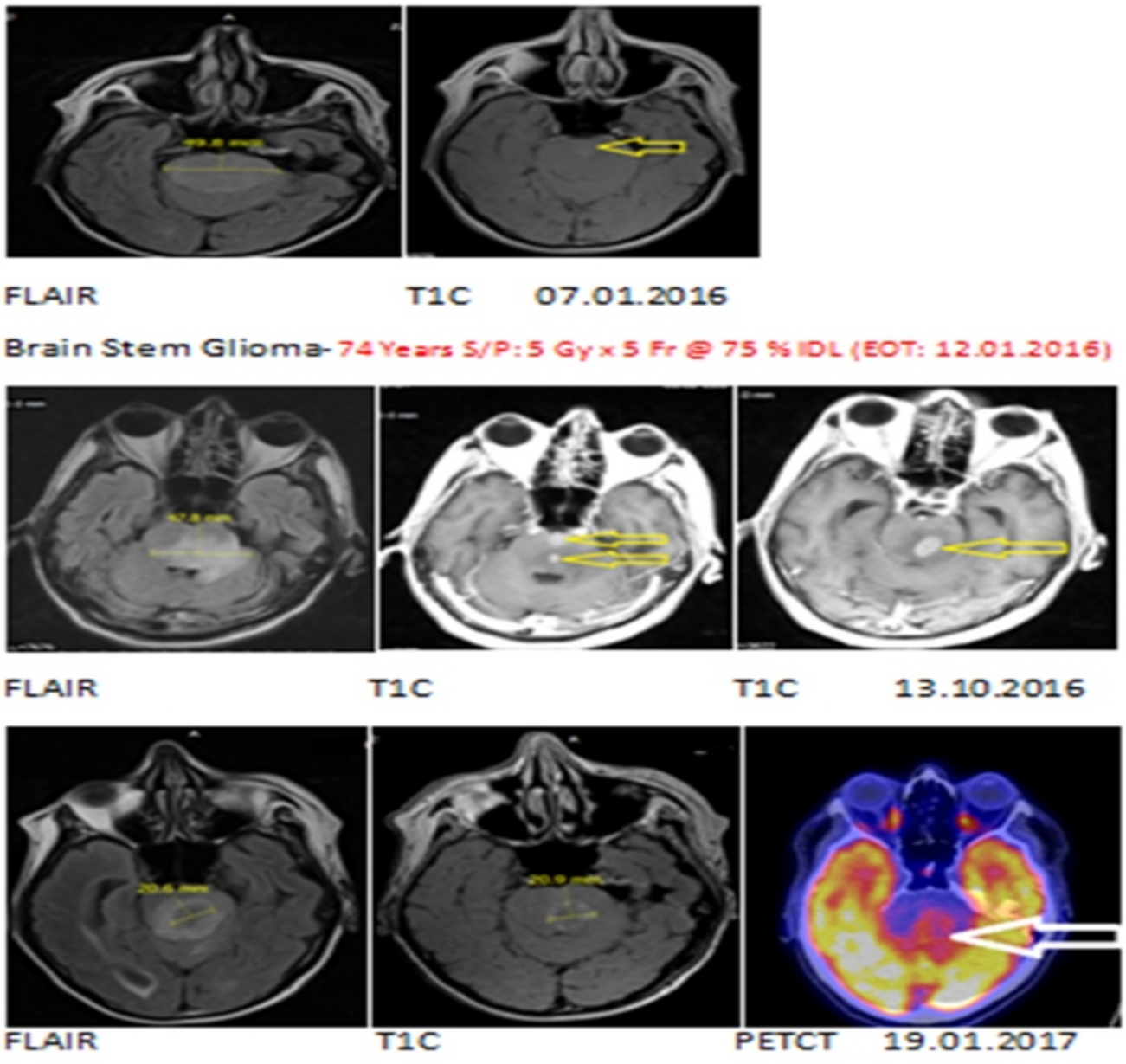
1987 Model U
201 Sources
4 Collimators
7 mins per isocentre

1987 Model B
Easy reloading
201 Sources
4 Collimators
7 mins per isocentre

1999 Model C
201 Sources
2 mins per isocentre

2006 Perfexion
192 Sources
3 Collimators
4 Sec per isocentre
Automated Shielding

2016 ICON
192 Sources
3 Collimators
Easy fractionation



Synergy-S Case Report:

74 Years male patient was presented with brain stem symptoms, KPS around 70 % and MRI showed Huge infiltrative lesion that turned out to be neoplastic lesion favoring Glioma on MRS in January 2016. Due to deep location, biopsy /surgery was deferred.

On radiologic grounds, he was treated with multisession radiosurgery on Synergy-S.

Multisession Radiosurgery (Synergy-S) Prescription:

PTV: 5 Gy x 5 Fractions at 75 % Isodose Line.

The patient responded well and improved in symptoms. Steroids were off at 6 weeks and he achieved KPS 100% within 2 months of multisession SRS.

On routine Follow-up he developed small contrast enhancing nodule within the previously treated brain stem region. But he was asymptomatic. He was kept on follow-up and MRI was repeated after 3 months and found to have slight increase in lesion size and patient developed weakness and imbalance.

PET-CT detection of Tumor

5 FDG PET-CT was performed to differentiate between the radiation necrosis or recurrent tumor. PET-CT showed increased uptake in the region of interest as compared to the background brain uptake and was labeled as recurrent tumor.

He was re-irradiated to the small recurrent nodule with the following dose prescription.

PTV: 4.5 Gy x5 Fractions @ 65 % Isodose Line.

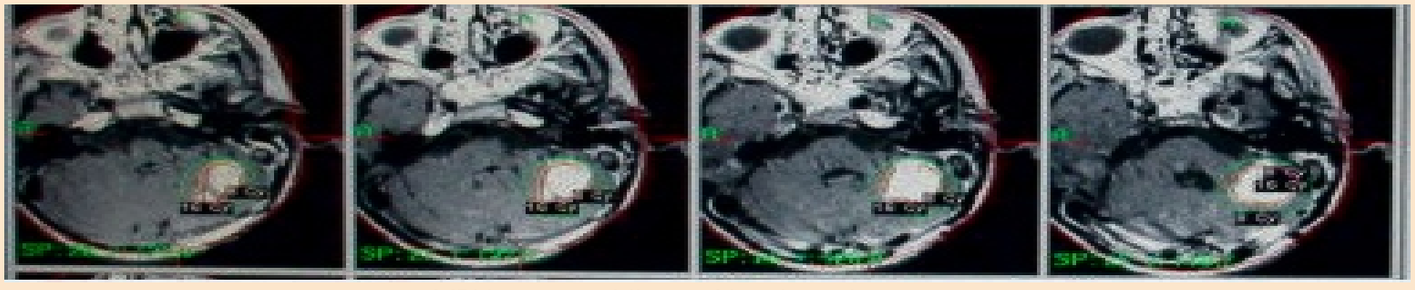
Patient has got good symptomatic improvement again within 6 weeks time and is on regular follow-up now.

Gamma Knife Radiosurgery for Recurrent Medulloblastoma

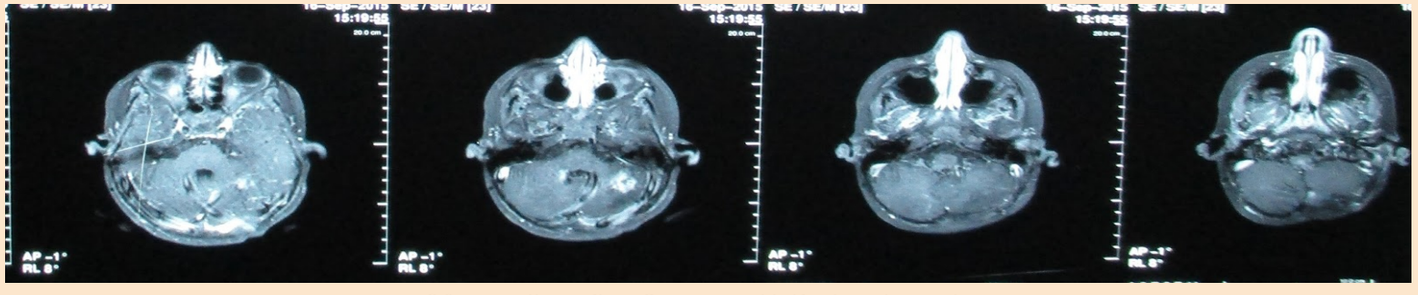
This 7 years old boy from Faisalabad, was operated for Medulloblastoma WHO G-IV in October 2013. MRI brain with contrast dated January 08, 2015 shows interval increase in dural based nodular lesion rising from the left tentorial leaf, suggestive of recurrence of disease. Patient already had whole brain radiotherapy, in 30 fraction, from November 2013 to December 2013. Seven cycles of Chemotherapy completed in September 2014. Patient referred to us for Gamma Knife Radiosurgery. Patient has following treatment,

Target	Location	Prescription	Volume
A	Recurrent Medulloblastoma	16.0 Gy @ 50 % Single session	5.0 cm^3

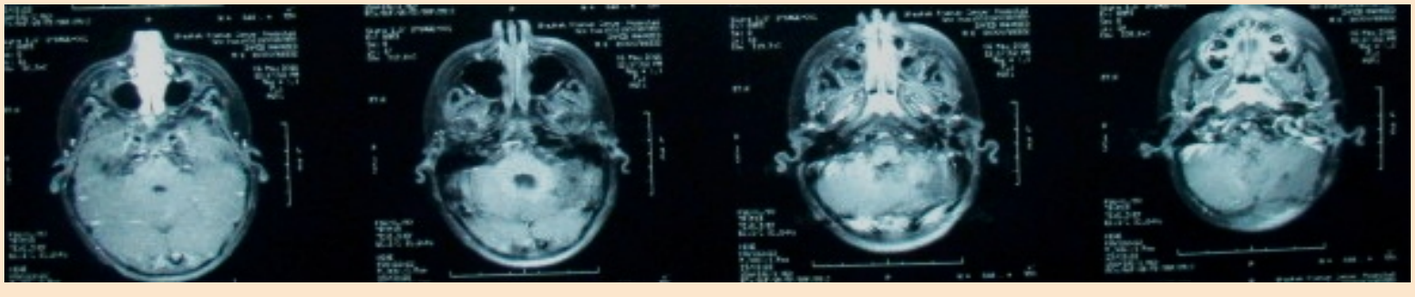
Multiple isocenter with 18 & 08 mm collimator used in APS mode. The dose was was delivered with Leksell Gamma Unit 4-C in single session.



MRI images at time of treatment



03 months after Gamma Knife treatment

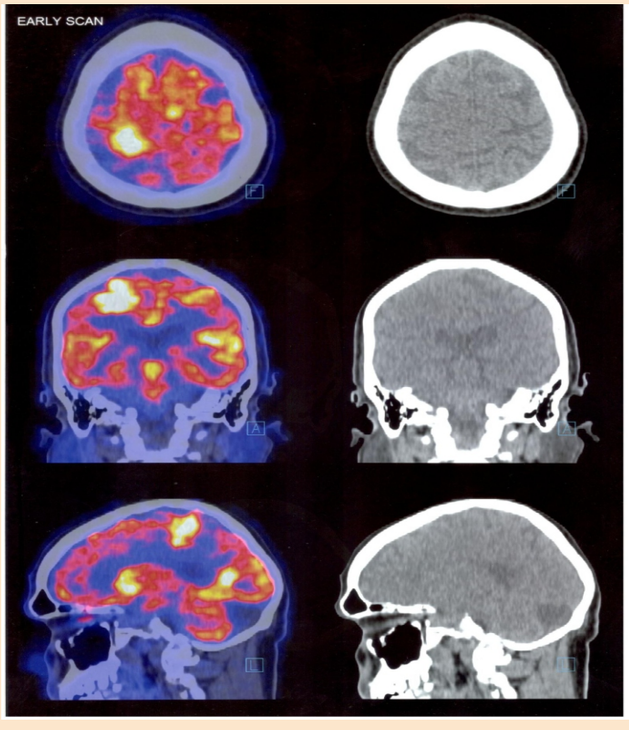


06 months after Gamma Knife treatment

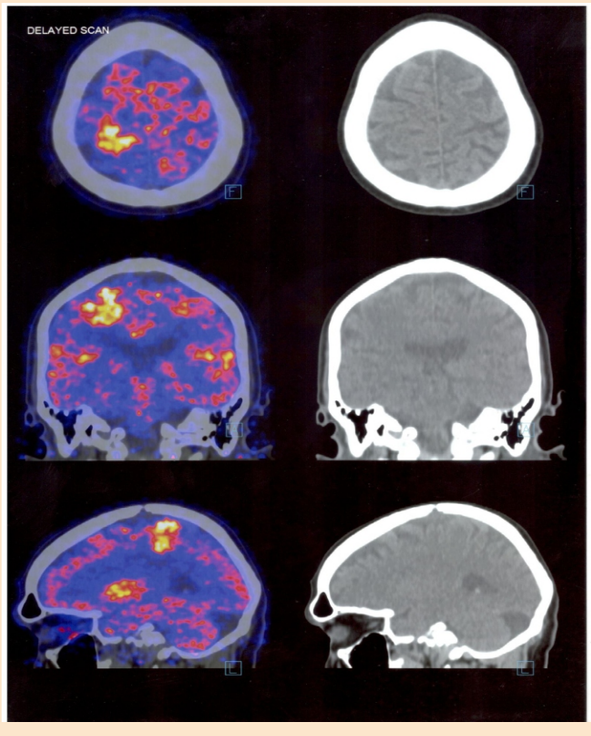
PET CT/SCAN

Today we discussed a case of 60 years old male patient with history of "Right parietal neoplasm / granulomat ?"

Difference between Early Scan and Delayed Scan



Early Scan



Delayed Scan

There is evidence of irregular FDG avid lesion seen in right frontoparietal lobe superiorly. It has SUVbw of 16.59 on early scan and 18.74 on delayed scan, it measures 2.5 x 2.5 3.4 cm in size.
Regional SUVbw is 9.08. Findings likely representing high grade glioma.
Non-FDG avid hypotenuse area is seen in posterior fossa, it may represent giant cisterna magna.

N.B. FDG uptake in a neoplastic lesion tends to increase on delayed scan in contrast to granulomatous / inflammatory condition where it tends to decrease.

M. Hashim Memorial Trust

اَفضَلُ الاَشغَالُ خِدمَتُ النَّاس

M.Hashim Memorial Trust organized a World Cancer Day on February 4th 2017 and celebrate this day to arranged a Walk Against Cancer and a Public Awareness Seminar in NCCI Hospital premises and we are very thankful to companies who sponsored this event, and all others NGO members, scouts team, schools students, volunteers, staff members, doctors who participated in Walk Against Cancer on World Cancer Day and Public Awareness Seminar to make this event successful also thankful to print & electronic media coverage. last but not the least Mr. Saleem Afridi Pakistan famous comedian who fill the seminar & warm the event with his talent.

Kazi Munir Uddin
Fundraising Manager