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Evidence based management for the Glioma using HOMOEOPATHY

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ABSTRACT

Low-grade gliomas (LGGs) are a diverse group of primary brain tumors that often arise in young, otherwise healthy patients and generally have an indolent course with longer-term survival in comparison with high-grade gliomas. Treatment options include observation, surgery, radiation, chemotherapy, or a combined approach, and management is individualized based on tumor location, histology, molecular profile, and patient characteristics. Moreover, in this type of brain tumor with a relatively good prognosis and prolonged survival, the potential benefits of treatment must be carefully weighed against potential treatment-related risks. We review in this article current management strategies for LGG using homoeopathy.

1. Introduction

Central nervous system tumors are defined by their cell of origin and their histopathological characteristics, which predict their behavior. Gliomas are neuroepithelial tumors originating from the supporting glial cells of the central nervous system (CNS). Glial tumors consist of astrocytomas, oligodendrogliomas, mixed oligo-astrocytic, and mixed glioneuronal tumors, which arise from astrocytic, oligodendroglial, mixed oligoastrocytic, or neuronal-glial cells, respectively. The World Health Organization (WHO) classification system categorizes gliomas from grade 1 (lowest grade) through grade 4 (highest grade), based upon histopathologic characteristics such as cytological atypia, anaplasia, mitotic activity, microvascular proliferation, and necrosis. Low-grade gliomas (LGGs) consist of grade I tumors, which contain none of the aforementioned histologic features, and grade II tumors, characterized by the presence of cytologic atypia alone. Low-grade astrocytic tumors include diffuse astrocytoma, pilomyxoid astrocytoma, and pleomorphic xanthoastrocytoma (WHO grade II), as well as subependymal giant cell astrocytoma (SEGA) and pilocytic astrocytoma (WHO grade I tumors). Low-grade oligodendroglial tumors include oligodendrogliomas and oligoastrocytomas (WHO grade II tumors). Low-grade glioneuronal tumors include the following WHO grade I tumors: ganglioglioma, desmoplastic infantile astrocytoma and ganglioglioma, dysembryoplastic neuroepithelial tumor, papillary glioneuronal tumor, and rosette-forming glioneuronal tumor of the fourth ventricle.

2. Presentation

LGGs present most commonly in the second through fourth decades of life, with peak incidence in the third and fourth decades of life. Clinical signs and symptoms vary and are largely attributed to mass effect from invasion into surrounding parenchyma or obstructive hydrocephalus [4]. Seizure is the presenting symptom in up to 80% of patients [4]. Others may present with cognitive or behavioral changes, focal neurologic deficits, or clinical signs or symptoms of increased intracranial pressure, such as headache or papilledema. However, patients may also be asymptomatic, without evident abnormalities on neurologic examination.

Diagnosis

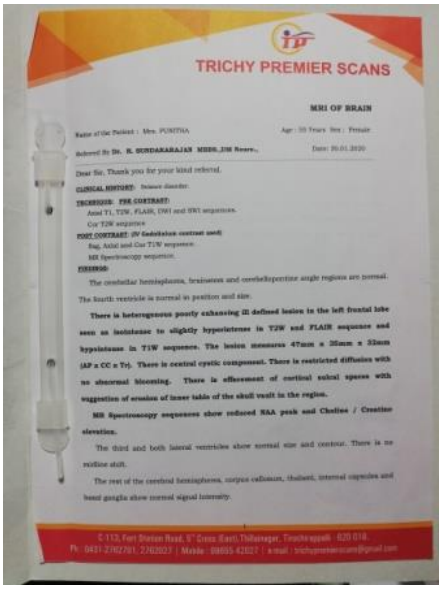
Diagnosis of LGGs is made through a combination of imaging, histopathology, and molecular diagnostic methods. On computed tomography scan, low-grade gliomas appear as diffuse areas of low attenuation. On conventional magnetic resonance imaging (MRI), which is currently the imaging modality of choice, LGGs are often homogeneous. Although contrast enhancement has been

classically associated with a higher degree of malignancy, some degree of contrast enhancement may be seen in up to 60% of LGG. LGGs differ from grade III and IV gliomas, as the latter often demonstrate a higher degree of tumor heterogeneity and contrast enhancement, restricted diffusion on diffusion-weighted imaging magnetic resonance (MR) sequences. Despite characteristic radiographic findings, tumor grade cannot be determined by imaging alone. Newer imaging techniques, such as MR spectroscopy (MRS) and positron emission tomography (PET) imaging, may improve the diagnostic potential; however, at this time, histopathologic examination of tissue remains the gold standard for diagnosis and grading of LGG

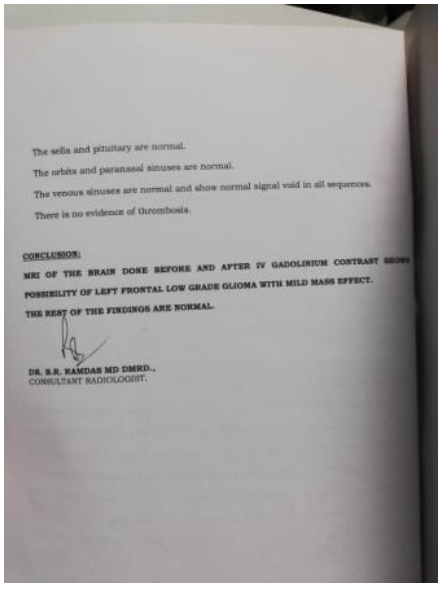
Case presentation

A 55 year old female patient presented to the OP with complaints of repeated attacks of headaches on exposure to sun and numbness of cervical region extending to shoulder. Her vital signs were within limits and her generals were also good. Initially she was evaluated for cervical strain and treated accordingly which ameliorated her symptoms temporarily but later found no significant relief. Hence she was sent for an evaluatory CT which showed the following results.

Fig 1. CT BRAIN DATED 30.01.2020


TRICHY PREMIER SCANS

MRI OF BRAIN


The sella and pituitary are normal.

The orbits and paranasal sinuses are normal.

The venous sinuses are normal and show normal signal void in all sequences.

There is no evidence of thrombosis.

CONCLUSION:

MRI OF THE BRAIN DONE BEFORE AND AFTER IV GADOLINIUM CONTRAST SHOWS POSSIBILITY OF LEFT FRONTAL LOW GRADE GLIOMA WITH MILD MASS EFFECT.

THE REST OF THE FINDINGS ARE NORMAL.

DR. S.R. RAMDAS MD DMRD.,
CONSULTANT RADIOLOGIST.

LEFT FRONTAL LOW GRADE GLIOMA WITH MILD MASS EFFECT.

Post diagnosis she was treated with the following medications

3. Medications prescribed

GELSEMIUM:

- Centres its action upon the nervous system causing various degrees of motor paralysis. General prostration, dizziness, drowsiness, dullness and trembling. Mental apathy. Lack of muscular co-ordination. General depression from heat of sun. Heaviness of head, band feeling around occiput. Dull, heavy ache with heaviness of eyelids, bruised sensation, better by compression and lying with head high. Pain in temple, extending to ear and wing of nose, chin. Headache with muscular soreness of neck and shoulders. Headache preceded by blindness. Better by urination. Scalp sore to touch. Delirious on falling asleep. Wants to have head raised on pillow.

LACHESIS:

- Pain through head on awaking. Pain at root of nose. Pressure and burning on vertex. Waves of pain; worse after moving. Sun headaches. With headache, flickering, dim vision, very pale face. Vertigo. Relived by onset of any discharge.

GLONOINUM:

- Confusion, with dizziness. Effects of sunstroke; heat on head, as in type-setters and workers under gas and electric light. Head heavy, but cannot lay it on pillow. Cannot bear any heat about head. Better from uncovering head. Throbbing headache. Angio-spastic neuralgia of head and face. Very irritable. Vertigo on assuming upright position. Cerebral congestion. Head feels enormously large, as if skull were too small of brain. Sun headaches; increases and decreases with the sun. Shocks in head, synchronous with pulse. Headache in place of menses. Rush of blood to head in threatened apoplexy.

NATRUM CARBONICUM:

- Aches from slightest mental exertion, worse from sun or working under gas-light. Feels too large. Oversensitive of hearing. Headaches with return of hot weather. Vertigo from exposure to sun.

CALCAREA FLOURICA:

- Blood- tumours. Interfering with sleep.

KALI PHOSPHORICA:

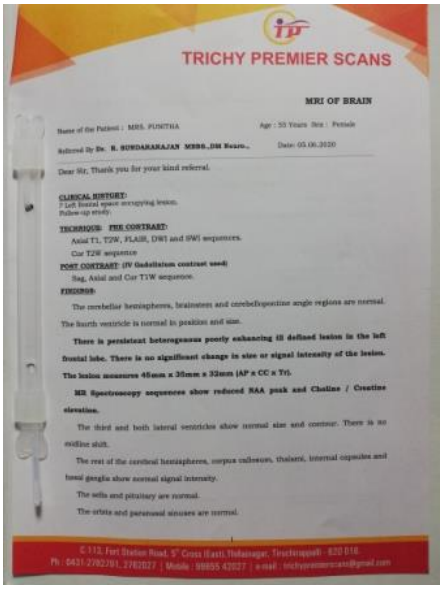
- Occipital headache; better, after rising. Vertigo, from lying, on standing up, from sitting, when looking upward. Cerebral anaemia. Headache of those worn out by fatigue. Headaches relieved by gentle motion. Headache, with weary, empty, gone feeling at stomach.

THUJA OCCIDENTALIS:

- Pain as if pierced by a nail. Neuralgia- left sided headache. Headache in morning, as after stooping, or after too profound sleep, with redness of face. Heaviness of head esp. in morning. Pressive headache with shocks in forehead and temples. Pain as if a tight hoop encircled on forehead. Sunstroke: everything seems pulsating and pressive.

Following these medications she was sent for a review MRI stating

Fig 2. CT ABDOMEN AND PELVIS DATED 05.06.2020


TRICHY PREMIER SCANS

MRI OF BRAIN

Name of the Patient : MRS. PUNITHA Age : 50 Years Sex : Female

Referred By Dr. S. SUNDARARAJAN MSS6..DM Neuro.. Date: 05.06.2020

Dear Sir, Thank you for your kind referral.

CLINICAL HISTORY:
Left frontal space occupying lesion.
Follow-up study.

TECHNIQUE: PRE CONTRAST:
Axial T1, T2W, FLAIR, DWI and SWI sequences.
Cor T2W sequence

POST CONTRAST: (IV Gadolinium contrast used)
Sag, Axial and Cor T1W sequence.

FINDINGS:
The cerebellar hemispheres, brainstem and cerebellopontine angle regions are normal.
The fourth ventricle is normal in position and size.
There is persistent heterogenous poorly enhancing ill defined lesion in the left frontal lobe. There is no significant change in size or signal intensity of the lesion.
The lesion measures 45mm x 35mm x 32mm (AP x CC x TV).
MR Spectroscopy sequences show reduced NAA peak and Choline / Creatine elevation.
The third and both lateral ventricles show normal size and contour. There is no midline shift.
The rest of the cerebral hemispheres, corpus callosum, thalami, internal capsules and basal ganglia show normal signal intensity.
The sella and pituitary are normal.
The orbits and paranasal sinuses are normal.

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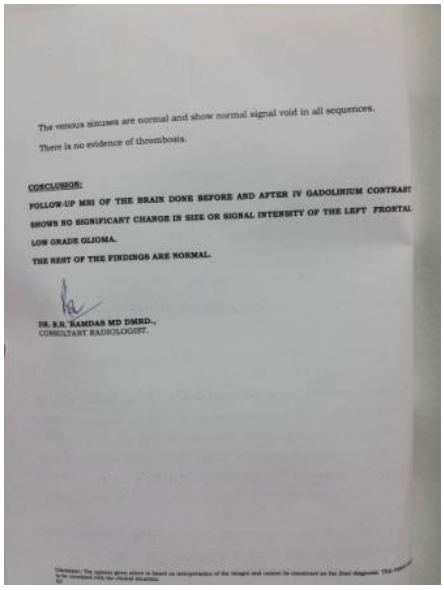
The venous sinuses are normal and show normal signal void in all sequences.

There is no evidence of thrombosis.

CONCLUSION:

FOLLOW-UP MRI OF THE BRAIN DONE BEFORE AND AFTER IV GADOLINIUM CONTRAST SHOWS NO SIGNIFICANT CHANGE IN SIZE OR SIGNAL INTENSITY OF THE LEFT FRONTAL LOW GRADE GLIOMA.

THE REST OF THE FINDINGS ARE NORMAL.

DR. S.R. RAMDAS MD DMRD.,
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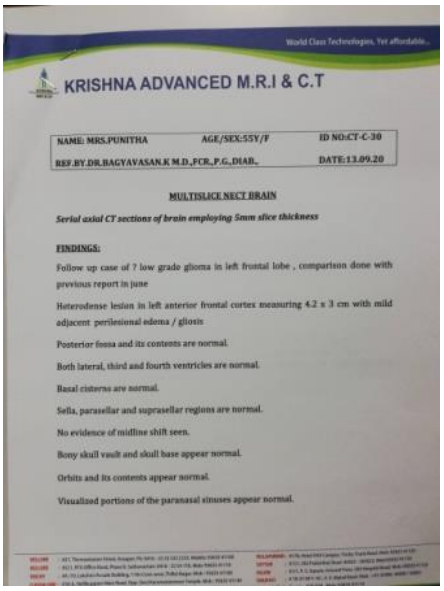
LEFT FRONTAL LOBE - **47X35X32 CM** CENTRAL CYSTIC COMPONENET WITH RESTRICTED DIFFUSION EFFECEMENT OF CROTICAL SULCAL SPACES WITH SUGGESTION OF ERROSION

Review follow up showed a betterment of symptoms.

Final NECT reports showed

Fig 3. NECT REPORT IN COMPARISON WITH THE PREVIOUS REPORTS DATED 13.09.2020



KRISHNA ADVANCED M.R.I & C.T

NAME: MRS.PUNITHA AGE/SEX:55Y/F ID NO:CT-C-30

REF.BY.DR.BAGYAVASAN.K M.D.,FCR.,P.G.,DIAB., DATE:13.09.20

MULTISLICE NECT BRAIN

Serial axial CT sections of brain employing 5mm slice thickness

FINDINGS:

Follow up case of ? low grade glioma in left frontal lobe , comparison done with previous report in june

Heterodense lesion in left anterior frontal cortex measuring 4.2 x 3 cm with mild adjacent perilesional edema / gliosis

Posterior fossa and its contents are normal.

Both lateral, third and fourth ventricles are normal.

Basal cisterns are normal.

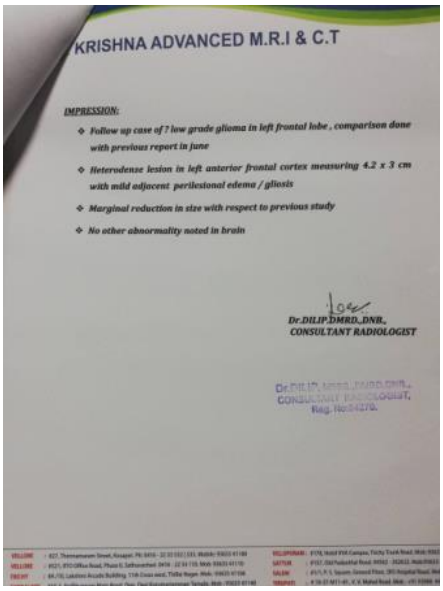
Sella, parasellar and suprasellar regions are normal.

No evidence of midline shift seen.

Bony skull vault and skull base appear normal.

Orbits and its contents appear normal.

Visualized portions of the paranasal sinuses appear normal.



KRISHNA ADVANCED M.R.I & C.T

IMPRESSION:

- *Follow up case of ? low grade glioma in left frontal lobe , comparison done with previous report in june*
- *Heterodense lesion in left anterior frontal cortex measuring 4.2 x 3 cm with mild adjacent perilesional edema / gliosis*
- *Marginal reduction in size with respect to previous study*
- *No other abnormality noted in brain*

Dr.DILIP.DMRD.,DNB.,
CONSULTANT RADIOLOGIST

CASE OF LOW GRADE GLIOMA IN LEFT FRONTAL LOBE SHOWS HETRODENSE LESIONS IN LEFT ANTERIOUR FRONTAL CORTEX MEASURING 4.2 X 3 CMS WITH MILD ADJACENT PERILESIONAL EDEMA/ GLIOSIS. MARGINAL REDUCTION IN RELATION WITH PREVIOUS STUDY.

4. Conclusion

The standard options for low-grade gliomas include watchful waiting or radiotherapy depending or surgery on the risk factors for recurrence. The use of homoeopathy for the treatment of this disease is generally controversial. Focusing on the evaluation of homoeopathy for the upfront treatment of newly diagnosed low-grade gliomas, are reassuring in this respect. It is still unclear whether homoeopathy can be used upfront alone instead of with radiotherapy. This question is addressed in this study. Despite limited follow-up, the study clearly confirmed the importance of immunity building homoeopathic treatment for low-grade gliomas.

ETHICAL APPROVAL:

None needed

AUTHOR CONTRIBUTION:

Dr**.** Bagyavasan Kannan: role in concept production, writing of manuscript, editing and approval.

Dr. Nowshika Vijayakumar: role in writing of manuscript.

Dr. Jeba Delphin: compilation of data.