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Research Article

A CASE STUDY ON GLIOBLASTOMA MULTIFORME

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ABSTRACT

GBM is the most common and aggressive malignant brain tumor in adults comprising 16% of all primary brain and central nervous system neoplasms[1]. It occurs almost exclusively in the brain, they can also appear in the brain stem, cerebellum, and spinal cord. Sixtey-one percent of all primary Gliomas occur in the four lobes of the brain: frontal (25%), temporal (20%), parietal (13%), and occipital (3%)[2]. It is classified as primary and secondary. A majority of GBMs are primary, and these patients tend to be older aged and have a poorer prognosis than patients with secondary GBMs[3]. In this article, we report a case of Glioblastoma multiforme in a male patient.

INTRODUCTION

Gliomas are the most prevalent type of adult brain tumor, accounting for 78 percent of malignant brain tumors. They arise from the glia (supporting cells of brain). GBM is the high grade glioma and most invasive type of glial tumor. These tumors tend to grow rapidly, spread to other tissue and have a poor prognosis. They may be composed of several different kinds of cells, such as astrocytes and oligodendrocytes. GBM is more common in people ages 50-70 and are more prevalent in men and women[4]. These are malignant Grade IV tumors.

Glioblastoma may arise do novo, which means they begin as a Grade IV tumor with no evidence of a lower grade precursor. De novo tumors are the most common form of glioblastoma and tend to be more aggressive and tend to affect older patients. Alternatively, secondary glioblastomas may progress from a lower grade astrocytic tumors (Grade II or Grade III) and evolve into Grade IV tumors over time. In general these tumors tends to be slower growing initially, but can progressively become aggressive.[5]

Staging of Gliomas

The WHO has developed a grading system for gliomas, which more accurately predicts outcomes. This system grades the tumor based on hypercellularity, mitosis rates, presence of necrosis, and vascular proliferation.[6]

WHO Grading System for Gliomas

Grade	Comments
Grade I tumor (Juvenile pilocytic Astrocytomas)	Benign, slow-growing tumor; usually associated with long-term survival; least likely to recur.
Grade II tumor (Astrocytomas)	Increased hypercellularity; no mitosis; no vascular proliferation; no necrosis; can recur as a higher-grade tumor
Grade III tumor (anaplastic astrocytoma)	High rate of hypercellularity; high rate of mitosis; no vascular proliferation; no necrosis, high rate of tumor recurrence
Grade IV tumor (glioblastoma)	Very high rate of hypercellularity; very high rate of mitosis; presence of vascular proliferation; presence of necrosis.

Epidemiology

The National Cancer Institute estimates that 22,850 adults (12,630 men and 10,280 women) were diagnosed with brain and other nervous system cancer in 2015. It also estimates that in 2015, 15,320 of these diagnoses resulted in death.

The prevalence of GBM has an incidence of two to three per 100,000 adults per year, and accounts for 52 percent of all primary brain tumors. Overall, GBM accounts for about 17 percent of all tumors of the brain (primary and metastatic). These tumors tend to occur in adults between the ages of 45 and 70. Between 2005 and 2009, the median age for death from

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cancer of brain and other areas of central nervous system was age 64.[7]

Clinical Manifestations

Symptoms may vary depending on the location of the brain tumor and the anatomic structures of the involved brain.[8] Patient often present with symptoms of increased intracranial pressure, including headache and focal or progressive neurologic deficits. A seizure is the presenting symptom in as many as 25% of patients and can occur at a later stage of the disease in as many as 50% of patients.[9]

Clinical Diagnosis

The initial diagnostic imaging may include a computed tomography or Magnetic Resonance Imaging scan. On MRI, nearly all GBMs enhance with gadolinium contrast and show an irregularity shaped mass with a dense ring of enhancement and hypointense center of necrosis. Necrosis is the main feature of Grade IV GBM. On the World Health Organization classification system. Surrounding vasogenic edema, hemorrhage, and ventricular distortion or displacement may also be present on diagnostic imaging.[10,11]We report a case of Glioblastoma Multiform in 50 year old male patient

Case Report

A 50 years old male patient without any relevant family history or personal risk factors for cancer had suffered from severe headache on 17 January 2019. He is taken to Government hospital Tanda (HP). There the Diagnostic (radiological) examination reveals presence of multiple tumors. On 18 January 2019 Computed tomography scan of his brain was remarkable for the following findings "Heterogeneous Iso to hypo dense lesions in left-fronto-parietal lobe with peri lesional edema". Pathology reports reveals of specimen excision tumor brain reported in gross examination received multiple grey brown to grey white soft tissue pieces all together measuring 4 cm^3. In microscopic examination, the section examined shows histopathological features consistent with glioblastoma. The histopathology examination confirmed a diagnosis of GBM IV stage.

On 19 January 2019 the patient underwent surgical therapy, including craniotomy, excision of tumor from left fronto-parietal lobe. The prognosis after the surgery was very poor and unsatis factory and patient was sifted to SMVDNSH.

On 09/02/2019 the patient got admitted in HDU of SMVDNSH with complaints of severe headache, drainage from head, marked swelling on left side of head and face and fever.

Surgery is predominant modality of management of GBM The possibility of prognosis was discussed with patient and relatives and informed consent was obtained.

Post operatively the patient was given Injection

S. No	Trade Name	GenericName	Action	Side Effects
1	Inj. Omnikacin	Amikacin Sulphate 1g	Aminiglycoside	Diarrhea, hearing loss, spinning sensation, numbness, skin tingling, muscle twitching, convulsions and dizziness.
2.	Tab. Epitoin 300 mg	Epitoin 100	Anti epileptic	Uncontrollable eye movements, difficulty in falling asleep, confusion, or slowed thinking, loss of coordination, slurred speech, dizziness, headache, nausea, vomiting or constipation.
3.	Tab. Dexamethasone 2 mg	Dexamethasone sodium phosphate	Glucocorticosteroid	Vision changes, swelling, rapid weight gain, sleep problems, mood changes, acne, dry skin, thinning skin, bruising, slow wound healing, increased sweating, headache, muscle weakness.
4.	Tab. Temcad 100 mg	Tenazolamide	Anti cancerous (Alkylating agent)	Nausea, vomiting, loss of appetite, bruising, skin rash, insomnia, low WBCs(fever or flu symptoms), dizziness, weakness, loss of coordination.
5.	Tab. Pantocid	Pantoprazole 40 mg	Antacid	Headache, diarrhea, stomach pain, nausea or vomiting, gas dizziness, joint pain.

Outcome and Follow Up

At the end of two weeks treatment plan, the patient was suggested to undergone chemotherapy and radiotherapy. The radiotherapy was started on 4th March and chemotherapy started on 6th March for 42 days which includes 30 sessions of radiotherapy (external radiotherapy).

DISCUSSION

GBM is a aggressive and rapid growing brain cancer which spread quickly. The survival rate of patient with GBM is around 15 months. There is no cure but there are treatments to help ease symptoms. The treatments for GBM are surgery, Chemotherapy and Radiotherapy. In surgery most of the portion of tumor is removed. Radiation is used to kill leftover tumor cells, it also slows the growth of tumors. Chemotherapy is also used to retard growth of tumors.

References

1. Thakkar JP, Dolecek TA, Horbinski C, Ostrom QT, Lightner DD, Barnholtz-Sloan, JS, Villano JL. Epidemiologic and molecular prognostic review of glioblastoma. Cancer Epidemiology, Biomarkers and Prevention.
2. American Association of Neuroscience Nurses Care of the adult patient with a brain tumor. 2014 Retrived from http://www.abta.org/resources/health-care-provider/final-adult-clinical-practice.pdf. [PubMed] [CrossRef]]Google Scholar]
3. Wilson TA, Karajannis MA, Harter DH. Glioblastoma multiforme: State of the art and future therapeutics. Surgical Neurology International. 2014;5:64-62. Doi: 10.4103/2152-7806.132138. [PMC free article] [PubMed] [Cross Ref] [Google Scholar]

4. https://www/aans.org/Patients/Neurosurgical - conditions-and-Treatments/Brain-Tumors
5. https://www,.abta.org/tumor/types-glioblastoma/ gbm/American Brain Tumor Association.
6. Brain tumor staging. American Society of Clinical Oncology. www.cancer.net/patient/cancer+Types/Brain+Tumor?
7. https://www.aans.org/patients/neurosurgical-conditions-and-treatments/glioblastoma-multiforme.
8. Young RM, Jamshidi A, Davis G, Sherman JH. Current trends in the surgical management and treatment of adult glioblastoma. Annals of Translational Medicine. 2015;3:121. [PMC free article] [PubMed] [Google Scholar]
9. Glanz MJ, Cole BF, Forsyth PA, Recht LD, Wen PY, Chamberlain MC, Cairncross Jg. Practice parameter: Anticonvulsant prophylaxis in patients with newely diagnosed brain tumors. Report of the quality Standards Subcomittee of the American Academy of Neurology. Neurology.2000;54:1886-1893. Doi:10.1212/WNL.54.10.1886. [PubMed] [CrossRef] [Google Scholar]
10. American Association of Neuroscience Nurses Care of the adult patient with a brain tumor.2014 Retrived from http;//www.abta.org/resources/health-care-provider/final-adult-clinical-practice.pdf. [PubMed] [Google Schlar]
11. Ellor SV, Pagano- Young TA, Avgeropoulos NG. Glioblastoma: Background, standard treatment paradigms, and supportive care considerations. *Journal of Law, Medicine, and Ethics*. 2014;42:171-182.doi: 10.1111/jlme.12133.[PubMed] [CrossRef] [Google Scholar].

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