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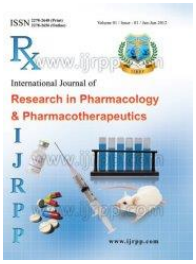

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Case Report ***Open Access***

A case report on management of medulloblastoma

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ABSTRACT

Medulloblastoma is the most common cancerous brain tumor in children, accounting for nearly 1 in 5 of all pediatric brain tumors. It almost always starts in the lower back part of the brain called the cerebellum, and tends to spread through spinal fluid .Treatment for medulloblastoma usually consists of a combination of surgery, radiation and chemotherapy. About three-fourths of children with medulloblastoma treated with this combined approach survive into adulthood. Survival depends on many factors, including age of diagnosis as well as the size, type, location and growth rate of the tumor. Therapies for medulloblastoma may cause delayed complications that can affect quality of life after treatment.

We report one such rare presentation of medulloblastoma, Mr. 41 years old man with a history of giddiness-June2012 and, He was taking treatment, but for persistence of symptoms he was again adviced MRI brain in Aug 2013 which showed – ill defined hyperintensities in superior cerebellar hemispheres B/L, vermis and middle cerebellar peduncles.MRI spine in Aug 2013 showed degenerative changes in cervical vertebra with indentation of cord in C5 – C6, C6 – C7 levels. CSF analysis was negative for malignant cells. He was furter evaluated – right suboccipital craniotomy and biopsy was done on 2 Nov2013. Biopsy report was in favors of small cell carcinoma. Biopsy material was sent for second opinion to NIMHANS, Bangalore on 27 Nov 2013. Final diagnosis of medduloblastoma. WHO grade IV; cerebellum. He received radiation therapy for 45 days from 16 Dec 2013 to 28 Jan 2014. He was notable to tolerate radiation, then adviced for chemotherapy. At this point the patient was started on immunonutritive therapy in april 2014 by Dr.Appa Rao. He improved so well in just 3 months and his later reports of MRI done on 20 Dec 2014 was completely normal.

Keywords: Medulloblastoma, Immunonutritive Therapy.

INTRODUCTION

Medulloblastoma is a highly malignant primary brain tumor (cancer) that originates in the part of the brain that is towards the back and the bottom, on the floor of the skull in the cerebellum or posterior fossa. The brain is divided into two main parts, the larger cerebrum on top and the smaller cerebellum below towards the back. They are separated by a membrane called the tentorium. Tumors that originate in the cerebellum or the surrounding region below the tentorium are therefore called infratentorial.

Another term for medulloblastoma is infratentorial primitive neuroectodermal tumor (PNET). Medulloblastoma is the most common PNET originating in the brain. All PNET tumors of the brain are invasive and rapidly growing tumors that, unlike most brain tumors, spread through the cerebrospinal fluid (CSF) and frequently metastasize to different locations in the brain and spine.

The cumulative relative survival rate for all age groups and histology follow-up was 60%,52%, and 47% at 5 years, 10 years, and 20 years, respectively, with children doing better than adults.

Patients diagnosed with a medulloblastoma or PNET are 50 times more likely to die than a matched member of the general population.The most recent population-based (SEER)5-year relative survival rates are 69% overall, but 72% in children (1–9 years) and 67% in adults (20+ years). The 20 year survival rate is 51% in children.

Incidence of medulloblastoma is 1.5-2 cases per 100,000 populations, with 350 new cases in the United States each year. Although the majority occur as sporadic cases, hereditary conditions have been associated with medulloblastoma, including [1] Gorlin syndrome (nevoid basal cell carcinoma syndrome), [2] blue rubber-bleb nevus syndrome, [3] Turcot syndrome (eg, glioma polyposis syndrome), and [4] Rubinstein-Taybi syndrome.

Children and adults have different survival profiles, with adults faring worse than children only after the 4th year post-diagnosis (after controlling for increased background mortality). Before the 4th year, survival probabilities are nearly identical.

Medulloblastoma is more common in males than females (1.5:1). Males also tend to have a poorer prognosis.

Hydrocephalus symptoms: Patients with medulloblastoma most commonly have symptoms related to increased intracranial pressure, Symptoms in younger children include listlessness, irritability, vomiting, and decreased social interactions, older children and adults complain of headache, especially upon awakening in the morning. Vomiting without nausea is more common in the morning, since being recumbent (eg, sleeping) increases intracranial pressure.Patients may develop double vision as the sixth cranial nerve becomes stretched from the hydrocephalus. Visual disturbances more commonly are a result of papilledema.

Cerebellar symptoms: Most commonly found in children, the tumor involves the cerebellar vermis and causes gait ataxia more readily than unilateral symptoms. Head tilt and neck stiffness, caused by meningeal irritation, are complications of tonsillar herniation below the foramen magnum. Patients can complain of severe weakness from tumor compression of the spinal cord or nerve roots (eg, radiculopathy).

Medulloblastoma is treated primarily with surgical excision followed by radiation therapy and chemotherapy.

1.Glucocorticoids: Reduction of vasogenic edema is the role of glucocorticoids in malignant brain tumors. A. Dexamethasone (Decadron, Dexasone): Most commonly used drug to treat vasogenic edema secondary to medulloblastoma. Promotes reduction of edema after craniotomy. B. Methylprednisolone (Solu-Medrol, Depo-Medrol): Decreases inflammation by suppressing migration of polymorphonuclear leukocytes and reversing increased capillary permeability. 2. Diuretics: These agents are used in the acute setting to prevent further increases of intracranial pressure. Mannitol (Osmitrol): May reduce subarachnoid space pressure by creating osmotic gradient between CSF in arachnoid space and plasma. Not for long-term use.3. Radiation therapy is an outpatient procedure. 4. Chemotherapy usually is administered on an inpatient basis.

CASE PRESENTATION

A 41 years old man with a history of giddiness-June2012 and, He was taking treatment, but for persistence of symptoms he was again adviced MRI brain in Aug 2013 which showed – ill defined hyperintensities in superior cerebellar hemispheres B/L, vermis and middle cerebellar peduncles.MRI spine in Aug 2013 showed degenerative changes in cervical vertebra with indentation of cord in C5 – C6,

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REPORTS

MRI brain-plain and contrast

Impression

- Known case of ceribellitis/? Medulloblastoma-status post right suboccipital craniotomy and biopsy.
- Small areas of gliosis noted in the right posterior cerebellar region-postbiopsy change, noares of enhancement seen in the cerebellum post contrast.
- Pre and post contast screening of entire spine does not revealany abnormalitiy.

MRI scan of spine

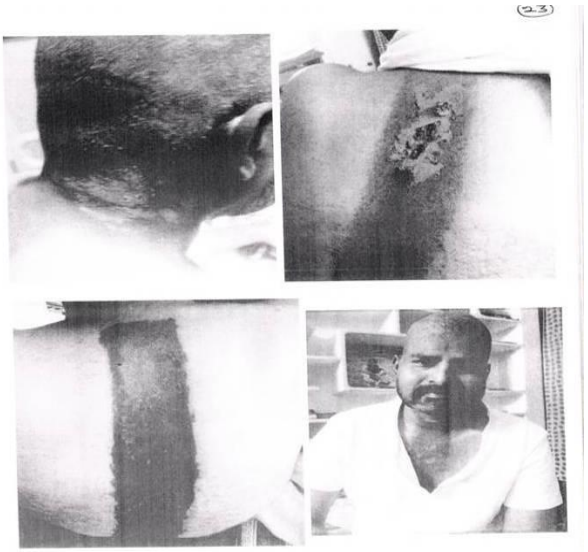
Impression

Showed degenerative changes in cervical vertebra with indentation of cord in C5 – C6, C6 – C7 levels.

MRI brain with intracranial MR angiography

Impression

Ill-defined symmetrical hyperintensities in the superior cerebellar hemispheres, vermis and both middle cerebellar hemispheres with associated with mass effect.



DISCUSSION

Medulloblastoma is a highly malignant primary brain tumor (cancer) that originates in the part of the brain that is towards the back and the bottom, on the floor of the skull in the cerebellum or posterior fossa. It is the most common PNET originating in the brain. All PNET tumors of the brain are invasive and rapidly growing tumors that, unlike most brain tumors, spread through the cerebrospinal fluid (CSF) and frequently metastasize to different locations in the brain and spine. Medulloblastoma is more common in males than females (1.5:1) &Males also tend to have a poorer prognosis. Various newer

therapies are still under study. The protocol designed by Dr. Appa Rao is beneficial to many.

CONCLUSION

A 41 years old man with a history of giddiness-June2012 and, He was taking treatment, but for persistence of symptoms he was again adviced MRI brain in Aug 2013 which showed – ill-defined hyperintensities in superior cerebellar hemispheres B/L, vermis and middle cerebellar peduncles.MRI spine in Aug 2013 showed degenerative changes in cervical vertebra with indentation of cord in C5 – C6, C6 – C7 levels. CSF analysis was negative for malignant cells. He was furter evaluated – right suboccipital craniotomy and biopsy was done on 2 Nov2013. Biopsy report was in favour of small cell carcinoma. Biopsy material was sent for second opinion to NIMHANS, Bangalore on 27 Nov 2013. Final diagnosis of medduloblastoma. WHO grade IV:cerebellum. He received radiation therapy for 45 days from 16 Dec 2013 to 28 Jan 2014. He was notable to tolerate radiation, then adviced for chemotherapy. At this point he met Dr. Appa Rao and started his treatment in april 2014. He improved so well in just 3 months and his later reports of MRI done on 20 Dec 2014 was completely normal.

Treatment schedule and follow up

Injection Human normal immunoglobulin (12 mg) and histamine dihydrochloride (0.15 mcg), (Belongs to any manufacturer). Two vials once in three days (3 doses) followed by two vials once in a week until 8 weeks. Aceclofenac 100mg twice a day for one month. Prednisolone tapered and maintained 5 mg per day. Ranitidine 150mg once a day in the morning. Methotrexate was stopped. Tomato, Banana fruit, Prawns and milk were restricted in nutrition.

After two months the patient condition has improved and his ESR levels has decreased to 50mm/Hr. The patient has resumed to his job and is able to carry on his routine activities satisfactorily. He is supposed to be on maintenance therapy as he is vulnerable to relapse for any immunological insults.

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