A Case of Late Supratentorial Seedling of Medulloblastoma

Rajeev Kumar Pandit[1], Manik Kumar Lama[2], Pritam Gurung[3], Pravesh Rajbhandari[4]

[1,2,3,4] Annapurna Neurological Institute and Allied Sciences , Maitighar, Kathmandu, Nepal

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Abstract

Medulloblastoma is a common infratentorial malignant tumour in children. This case was previously diagnosed with infratentorial medulloblastoma and was operated and completed chemo-radiotherapy and was regular follow up. On follow up scan he had tumour in sellar and suprasellar space and he underwent surgery. Histopathological examination showed medulloblastoma.

Keywords: late, supratentorial, seedling, medulloblastoma

Introduction

A very dangerous cerebellar tumor called medulloblastoma was first recognized as a distinct entity by Bailey and Cushing in 1925.[1] Medulloblastomas are classified as exceedingly aggressive tumors (WHO Grade IV), and even with appropriate recommended therapy, recurrences are common. Spinal seeding occurs frequently; however, seeding into the supratentorial compartment is rare in adults. In humans, the spine, posterior fossa, bones, and supratentorial area are the most prevalent sites of metastases[2]. It is uncommon for late medulloblastoma to metastasize to the supratentorial intraventricular area[2]. Here we report a case of late supratentorial seedling of medulloblastoma.

Case presentation

A 16-year-old boy who was previously operated for medulloblastoma in 2016 presented with complain of headache for 2 months which was rather localised to biparietal region associated with occasional projectile vomiting. He had no history of facial puffiness, enlargement of breast or secretion from breast, loss of libido, other chronic illness. Previously he underwent craniectomy and excision of medulloblastoma which was carried out in 2016; post-operatively he received radiotherapy and chemotherapy. The histopathological examination showed medulloblastoma WHO grade IV.

Methods

The physical examination was basically unremarkable. According to neurological studies, there was no motor or sensory deficiency and all cranial nerves were within normal bounds. MRI of the brain showed growth of mass in suprasellar region which was measuring about 2.4x2.2x3.7cm3 in T1 isointense (Fig1), T2 isointense (Fig2)

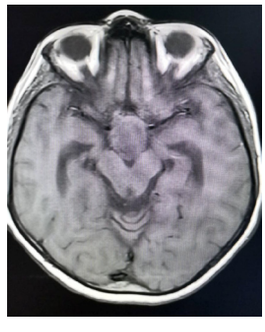

Figure: 1 MRI T1 Isointense space occupying lesion in Sellar space

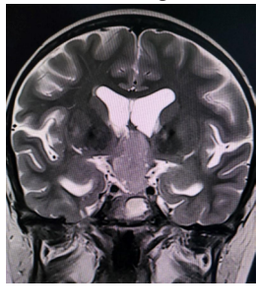

Figure: 2 MRI T2 Isointense homogenous space occupying lesion in Sellar space extending superiorly up to third ventricle

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Address for correspondence:

Rajeev Kumar Pandit
Annapurna Neurological Institute and Allied Sciences Maitighar-11, Kathmandu, Nepal
E-mail: przeev@gmail.com

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as well as homogenous enhancement in post contrast image (Fig3)

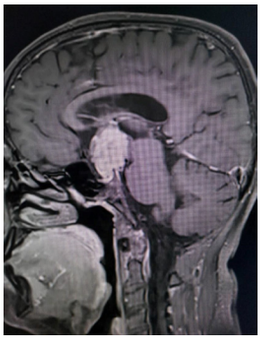

Figure: 3 MRI T1+Contrtast: Homogenous enhancement of lesion.

with extension to third ventricle and abutting both internal carotid artery (ICA). Presumptive diagnosis of craniopharyngioma was made after clinical and radiological evaluation and planned for surgery. After pre-operative evaluation the patient underwent craniotomy and complete excision of tumour. The histopathology report (Fig4,5)

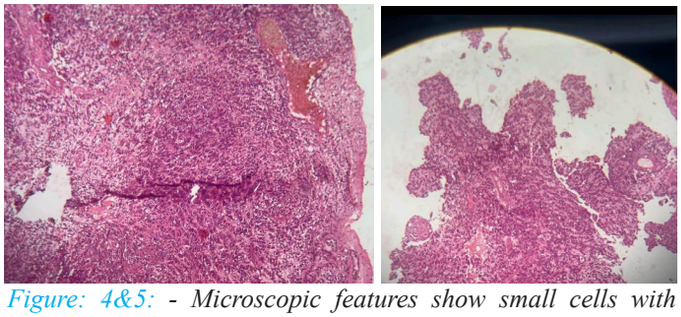

Figure: 4&5: - Microscopic features show small cells with round and ovoid nuclei

and immunohistochemistry report revealed medulloblastoma which is positive for synaptophysin and chromogranin. The patient was advised for radiotherapy. First follow up after 2 weeks was uneventful.

Discussion

Medulloblastoma is the most common primary brain tumour and PNET (primitive neuroectodermal tumour) in children that requires multidisciplinary therapy. A greater proportion of brain tumors in children than in adults are caused by medulloblastoma, which is more common in men than in women3. Reoccurrence at a single location and a greater distance from the initial diagnosis are known to be more reliable indicators of metastasis. The posterior fossa, the spine, the supratentorium, and the bones respectively are the locations in which metastases most typically occurred[3]. Supratentorial diffusion generally occurs within the sub-frontal region and may be the consequence of excessive radiation guarding of the orbital roof which inhibits irradiation of the cribriform plate, enabling a nidus to relapse4. The clustering of tumor cells in the prone posture in the frontal region and the inadequate radiation exposure in that area has been linked to the frequent supratentorial recurrences observed in the frontal and sub-frontal regions[5,6].

Iatrogenic diffusion through ventriculo-peritoneal shunts is another frequently suggested route for the extra-neural expansion of the medulloblastoma, and it is more likely to result in peritoneal metastases[7]. A large number of extra-neural medulloblastoma metastases happen not too long after the first diagnosis. Approximately 80% of the extra neuronal metastases are discovered within the first three years following the main diagnosis, despite the fact that the posterior-fossa and leptomeningeal metastases are found in the first five years of 80% to 85% of pediatric cases[7,8].

Conclusion

We concluded that possibility of recurrence of intracranial tumour in children with medulloblastoma should always be considered and regular follow up with radiology images for early detection and treatment should be advised. The prognosis of children with medulloblastoma with metastasis is not good.

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