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A Case Report of Cerebellar Glioblastoma

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Case Presentation

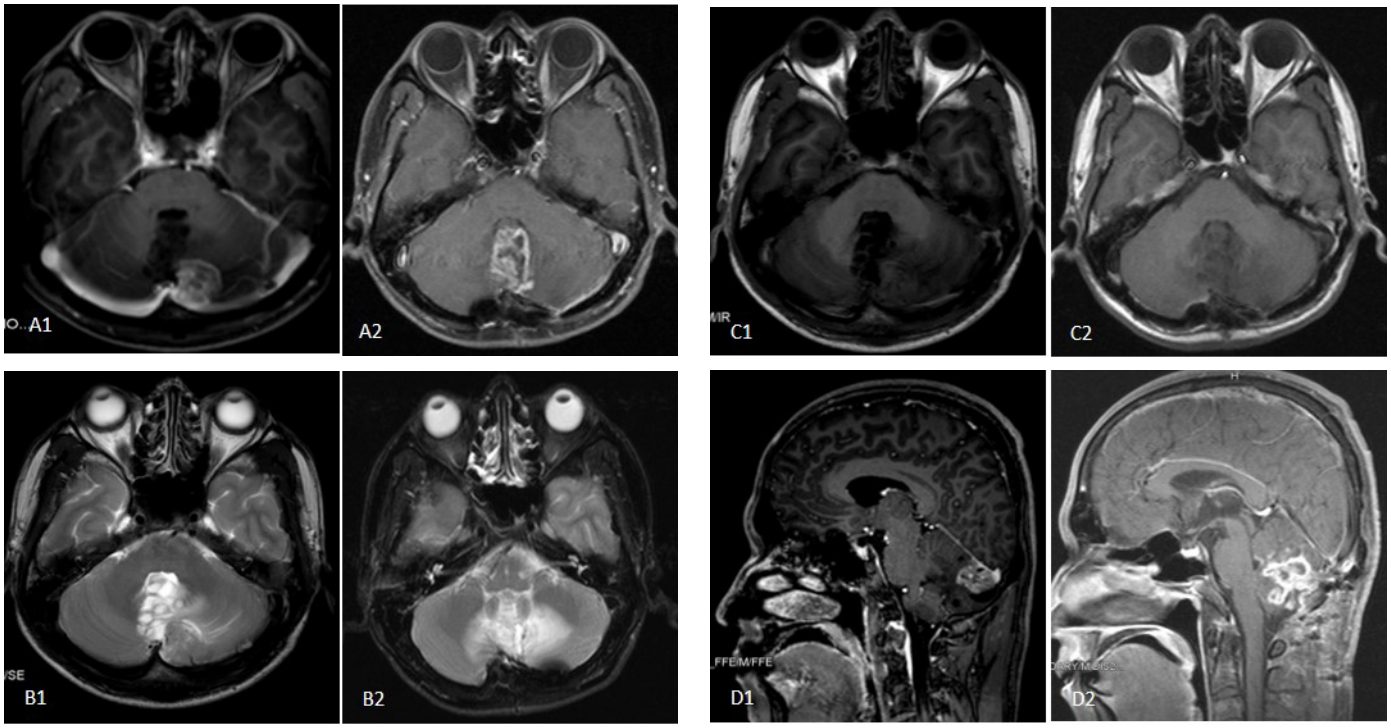
The patient, male 50 years old, was admitted to hospital for 20 days due to headache and vomiting. The CT and MRI of the external hospital head suggest intracranial space occupying, considering the possibility of tumor. Admission examination: clear mind, no abnormal cranial nerve examination; no deformity of spine and limbs; normal muscle strength of limbs. The head MRI of our hospital (2008-1-28 Figure 1 A1, B1,C1,D1,E1): Irregular mixed signal masses were seen in the cerebellar vermis and left cerebellar hemispheres, about 5.5 × 3.3 cm, with long and long T2 signals and multiple separations, accompanied by T2 signals such as partial display. The lesion was closely related to the left transverse sinus, cerebellar curtain and fourth ventricle. mild enlargement of the three ventricle and bilateral ventricle. Concluding remarks: cystic solid space-occupying lesions with mild obstructive hydrocephalus and multiple lines of tumors in the cerebellum and left cerebellum, with gliomas possibly large, excluding others. On January 30, 2008 a intracranial lesion resection, postoperative disease inspection: the cerebellar vermis and the left cerebellar hemisphere pleomorphic glioblastoma, GFAP (+), the EMA (+ / -) (+), S - 100, on February 20, 2008 line head gamma knife treatment, postoperative oral chemotherapy for mo thiazoleamine, 220 mg qd, and 25 with whole brain radiotherapy on foot, review the head MRI (Figure 1A, 2B, 2C 2008-10-07 2, D2, E2): Cerebellar vermis see 3.3 * 1.9 cm, irregular cystic or solid mass shadow with slightly long T1 and T2 signal is given priority to, the boundary is not clear, the surrounding brain parenchyma edema is not obvious, enhanced scan obviously circular reinforcement, and in the brain's interior see nodular shadows, occipital skull postoperative change, yu no abnormal signals in the brain parenchyma and abnormal strengthening, midline structure without deviation. Diagnostic advice: After glioma operation: Occipital skull showed postoperative changes, the current cerebellar vermis sac solid space, multi-line tumor recurrence, and involving the four ventricles. Mild hydrocephalus. Consider relapse and do fumosetine chemotherapy. After long-term follow-up. The patient developed headache in 2017, and the reexamination found intracranial occupation. MRI (2017-02-15 Figure 2A, B1, C1, D1, E1) showed irregular slightly longer T1, long T2 signal shadow in the cerebellum, about 2.8 X 4.5 in size. The enhancement scan was not uniform annular enhancement. The supratentorial ventricle is slightly enlarged. Diagnostic advice: cerebellar vermis cystic solid mass, considering the possibility of tumor recurrence, patients refused surgery, home recuperation, october 2019 patients with headache with gait instability, our hospital MRI (2020-02-23 Figure 2, A2, B2, C2, D2, E2) showed: Cerebellar vermis see a mass, about 3.4 cm size, high and low mixed signal, internal uneven enhancement, bilateral cystic foci, left larger, four ventricle compression, supratentorial hydrocephalus. Hemoflavin deposition was observed near the operative area and on the brain stem surface. T2 signal of the right mastoid process increased, and the mucosa of maxillary sinus, ethmoid sinus and frontal sinus thickened. **Diagnostic advice: Cerebellar space occupying lesions, cystic solid, multi-line tumor recurrence, secondary hydrocephalus. compared with 2017-2-15 day examination, the mass was enlarged. Nasal sinusitis. Right mastoiditis. Small brain space occupying resection under general anesthesia in 2020-2-28, postoperative pathology: < cerebellar space occupying > examination for extensive bleeding and necrosis tissue, vascular hyperplasia, dilatation; there are very few suspicious tumor tissue, tend to glioma, pathological tissue is too few, the type is difficult to determine, please combine clinical. The results of immunohistochemistry and gene detection are as follows. Simultaneous radiotherapy and chemotherapy with temozolomide was proposed after operation.**

Immunohistochemistry

GFAP	Oligo2	ATRX	IDH1	H3K27M	P53	P16	Ki-67	PAS	Hexamine silver
+	+	+	-	-	-	-	+, individual cells	-	-

Genetic testing

MGMT methylation	IDH1/2	BRAF
-	-	-



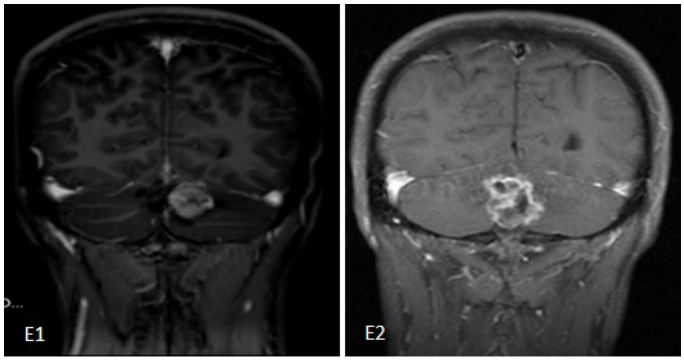
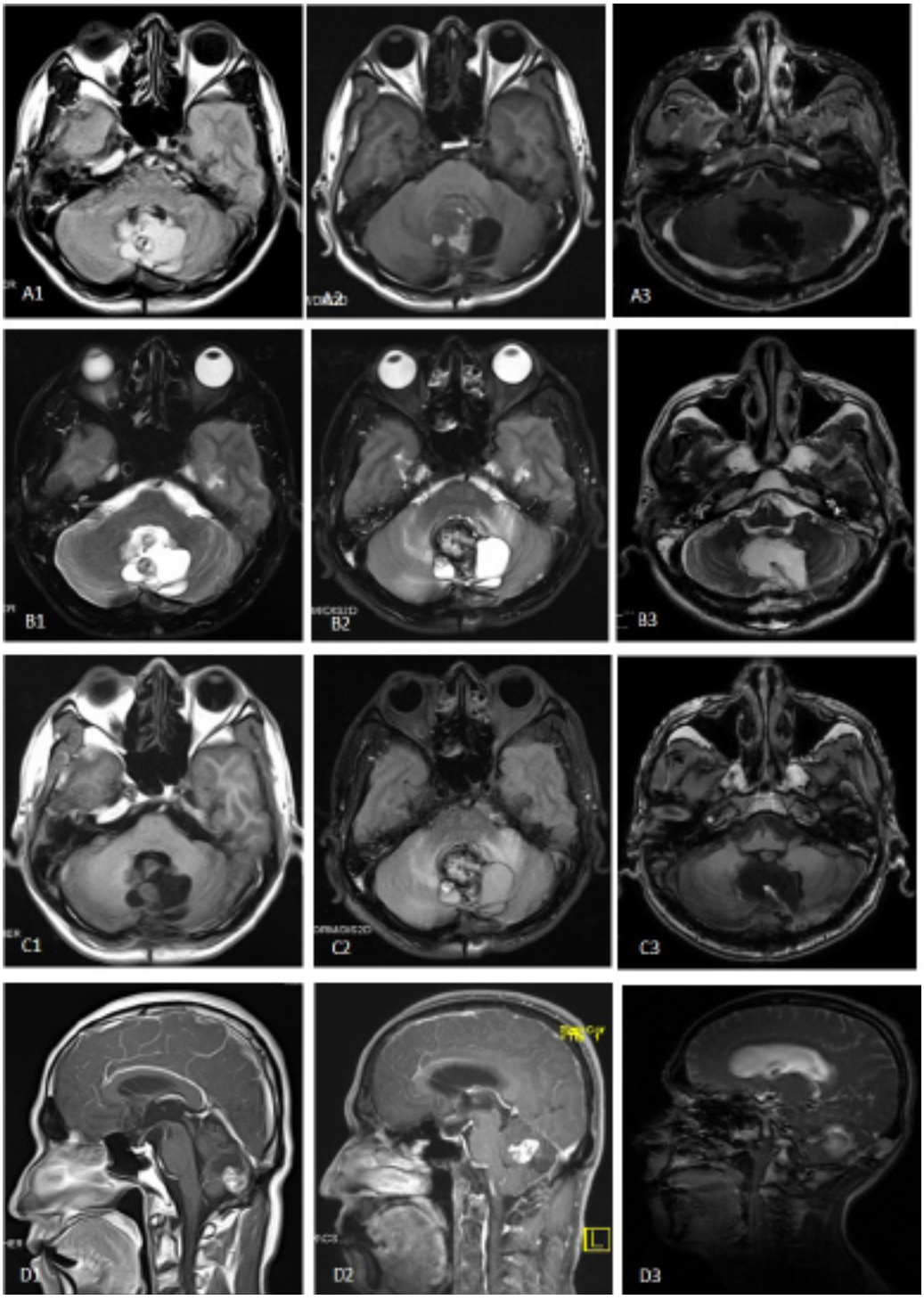


Figure 1: Preoperative (2008-01-28) T1 image axis (Fig A1), T2 image axis (Fig B1), T1 flair image (Fig C1), sagittal image (Fig D1), coronal image (Fig E1); Postoperative 2008(2008-10-07) T1 image axis (Fig A1), T2 image axis (Fig B1), T1 image sagittal (Fig D1), T1 image coronal (Fig Pre-operative 2020 after recurrence in 2017).



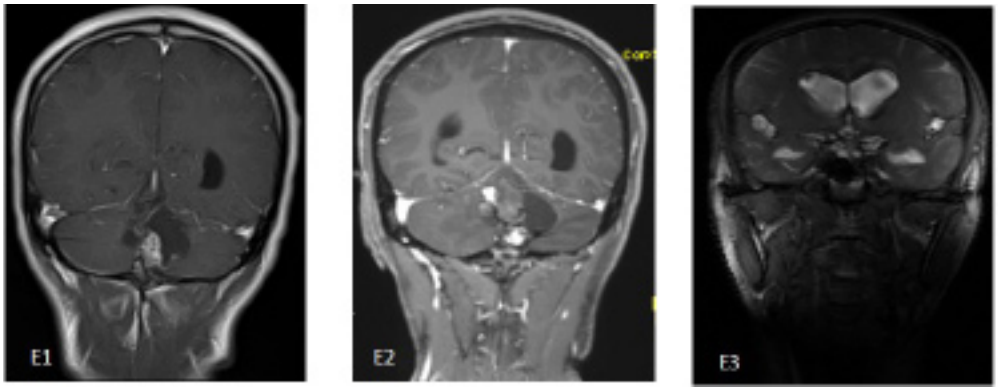


Figure 2: In 2017 (2017-02-15), T1 images were axial (Fig A1), T2 images axial (Fig B1), T1flair images (Fig C1), T1 images sagittal (Fig D1), and T1 images coronal (Fig E1). Before surgery in 2020 (2020-02-23), T1 images were axial (Fig A2), T2 images axial (Fig B2), T1flair images (Fig C2), T1 images sagittal (Fig D2), and T1 images coronal (Fig E2). After surgery in 2020 (2020-04-08), T1 image axial position (Fig A3), T2 image axial position (Fig B3), T1flair image (Fig C3), T2 image sagittal position (Fig D3), T2 image coronal position (Fig E3).sition (Fig A3), T2 image axial position (Fig B3), T1flair image (Fig C3), T2 image sagittal position (Fig D3), T2 image coronal position (Fig E3).

Discussion

glioblastoma (Cerebellar Glioblastoma,cGBM) is a common malignant tumor of adult primary central nervous system. its malignant degree is high, its progression is fast, its prognosis is poor, its clinical manifestation, imaging manifestation and tissue classification are related to the site, but the cGBM is very rare, the incidence rate is 0.24-4.1% of the brain, so the clinical characteristics, classification and therapeutic effect are different from those of supratentorial GBM [1]. The clinical manifestations are headache, vomiting, gait instability, blurred vision and other intracranial hypertension, co-economic disorders, cranial nerve symptoms, the current standard treatment for surgical resection of the focus after temozolomide chemotherapy combined with radiotherapy, bevacizumab has been approved for adult glioblastoma recurrence treatment [2,3] brainstem invasiveness and negative prognosis of EGFR amplification were better [4] The ki-67 of tumor proliferation index (MIB-1) of surgical biopsy showed that the tumor may progress relatively slowly, but it is different from the biological characteristics of recurrence of cerebellar glioblastoma. Molecular analysis of some cGBM cases has found that the frequency of molecular mutations such as H3K27M, BRAF v600E is different between supratentorial and cerebellum, but limited by sample size, it can not guarantee more detailed classification [5]. It is necessary to improve the case data and further study the molecular subtypes of cerebellar glioblastoma to guide clinical treatment and determine prognosis. If VEGF immunohistochemistry positive, may add apatinib to improve the prognosis.

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Project name of natural science foundation of Liaoning province: Basic research on the regulation effect of gegenqinlian decoction based on 16S rRNA gene on intestinal flora of mice with radioactive enteritis project no. 20180550798; Contract no.: 2018011225-301.

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