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Letter to Editor

A case of primary glioma in the cerebellopontine angle region

To the editor,

Glioma is the most prevalent primary malignant neoplasm of the central nervous system in adults. It predominantly arises in the supratentorial region and in infratentorial location is exceedingly rare. Most tumors in cerebellopontine angle (CPA) are extra-axially tumors and acoustic schwannoma or meningiomas is the most common type. In this report, we present a case of primary low-grade glioma arising at the CPA.

A 38-year-old male, complaining of unsteady gait accompanied by toothache for over 3 months, was admitted to hospital. The patient had no medical history. The physical examinations were unremarkable and no signs of focal neurological deficits. The cranial magnetic resonance imaging (MRI) indicated an occupying lesion in the left cerebellopontine angle, suggesting an extra-axial benign mass (Fig. 1a–c). The patient then underwent surgical resection. The cranial nerves were carefully separated intraoperatively and the tumor were complete resected. HE (Fig. 1d). The immunohistochemical staining (IHC) of the tumor cells were positive for glial fibrillary acidic protein (GFAP), p53, NF, S-100 (Fig. 1e–h), while negative for IDH-1 (Fig. 1i). The pathological diagnosis was adult-type diffuse glioma with World Health Organization (WHO) grade 2–3. The postoperative recovery was well with no apparent neurological deficits. Then the patient was treated with adjuvant radiotherapy (60 Gy/fraction) and concurrent temozolamide (200 mg/m^2). The patient's postoperative recovery has been smooth, with no apparent neurological deficits.

Glioma in the CPA is ultra-rare, it is easy to misdiagnose with other tumor which CPA is the one of most predilection sites, such as meningiomas, trigeminal nerve sheath tumors, epidermoid cysts, and arachnoid cysts.[1] To differentiate CPA glioma to other tumors, we summarized the specific imaging characteristics of these tumors in Table 1.[2] Even so, the definite diagnosis should depend on histopathological examination.

The pathogenesis of primary CPA glioma is still controversial.[3] It may be classified into intra-axial and extra-axial type according to the site of tumor origin. The intra-axial tumor mainly originates from the brainstem or cerebellum,[4] while the extra-axial tumor arises primarily from heterotopic neuroglial cell nests in the leptomeninges. Though studies showed most CPA gliomas were grouped into low-grade (WHO grade 2–3), there were still scattered reports of glioblastoma (WHO grade 4).

The current standard treatment for CPA glioma is maximum resection. Postoperative management includes radiotherapy and chemotherapy guided by molecular and genetic diagnostic results. Furthermore, emerging therapies such as electric field therapy, immunotherapy, and targeted therapy are gradually being

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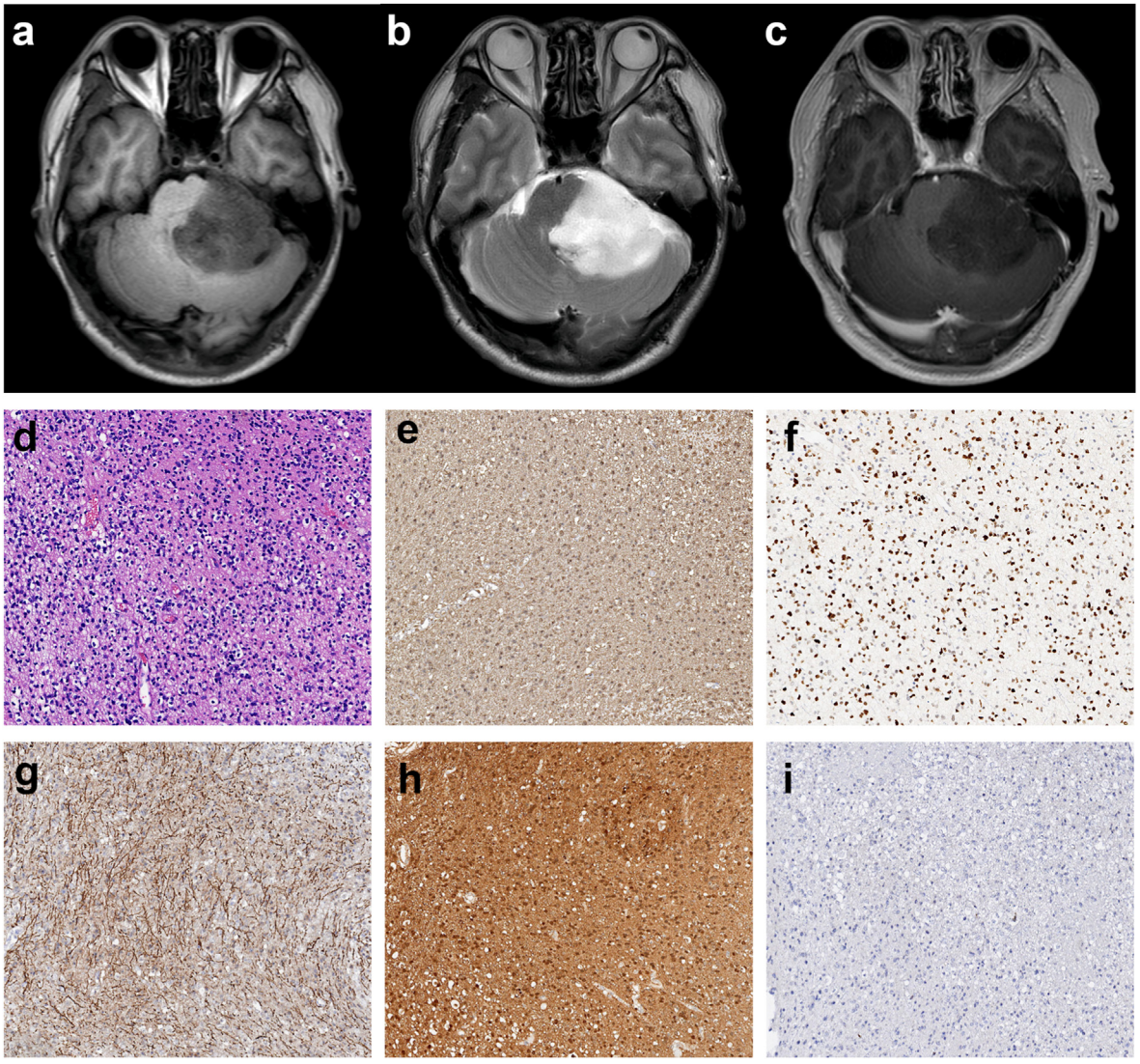

Fig. 1. −c A mass-like lesion with slightly prolonged T1 and prolonged T2 signals is observed in the left cerebellopontine angle, measuring approximately 5.4 cm × 4.6 cm in its largest cross-section. The demarcation between the lesion and the brain parenchyma is indistinct. Enhancement imaging does not reveal significant enhancement of the lesion, but the presence of intratumoral vascular structures is noted. Fig. 1d−i. The postoperative histopathology revealed adult diffuse glioma of the left pontine cerebellar angle at World Health Organization (WHO) grade 2−3 (Fig. 1d). The immunohistochemical staining (IHC) of the tumor cells were positive for glial fibrillary acidic protein (GFAP), p53, NF, S-100 (Fig. 1e−h), while negative for IDH-1 (Fig. 1i).

Table 1

Tumor Classification	Characteristics of Presentation	T1WI	T2WI	Enhancement Characteristics
Acoustic neurinoma	Involvement of the Internal Auditory Canal	equal/low	equal/high	Nodular Enhancement
Meningioma	wide base, clear border	equal/low	high	Inhomogeneous Enhancement
Trigeminal neuroma	“Dumbbell” change	low	high	significantly Enhancement
Inrtacranial epidermoid cyst	Irregular “drill when you see a crack"	low	high	No Enhancement
Hemangioblastoma	“Large Cyst and Small Nodule"	low	high	Uniform enhancement of mural nodules

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incorporated into clinical practice and showing promising results.[5] Nonetheless, the overall prognosis remains poor, the reported post-operative survival was less than 6 months no matter what treatment was chosen.

Declaration of competing interest

All the authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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