SURGICAL NEUROLOGY INTERNATIONAL

SNI: Unique Case Observations

OPEN ACCESS

For entire Editorial Board visit : http://www.surgicalneurologyint.com

Image Report

Fourth ventricle meningioma with cervical extension: An unusual entity

Ankit S. Shah, Robin Gupta, Ghanshyam Singhal, Anita Jagetia, Daljit Singh

Department of Neurosurgery, G.B. Pant Institute of Post Graduate Medical Education and Research (G.I.P.M.E.R.), New Delhi, India

E-mail: *Ankit S. Shah - aks_shah88@yahoo.com; Robin Gupta - hvgrobin@yahoo.co.in; Ghanshyam Singhal - singhalgd@gmail.com; Anita Jagetia - anitajagetia@gmail.com; Daljit Singh - drdaljit@hotmail.com
*Corresponding author

Received: 19 August 18 Accepted: 25 October 18 Published: 28 November 18

Key Words: Clear cell meningioma, dural attachment, fourth ventricle

A 35-year-old female patient was admitted with complaints of intermittent headache for 9 months and progressive gait disturbance for 6 months. She also complained of swaying while walking and disabling vertigo. Neurological examination on admission revealed ataxic dysarthria and ataxia of gait along with deranged cerebellar functions. Fundoscopy revealed papilledema.

Computed tomography (CT) showed a homogeneous hyperdense lesion occupying the whole fourth ventricle, with proximal enlargement of ventricular horns and heterogeneous enhancement on contrast administration. There were neither intralesional calcifications nor cyst formations. Magnetic resonance imaging [Figure 1a-f] confirmed the intraventricular location of the tumor that appeared isointense to the surrounding gray matter on T1 and hyperintense on T2-weighted sequences, with very intense and homogenous enhancement after intravenous injection of gadolinium- diethlenetriamine penta-acetic acid. The lesion had smooth margins with extension through the foramina of Luschka and inferiorly to the cervical canal up to C2 vertebrae and filling the entire cisterna magna without any dural attachment, thus prompting us to label it preoperatively as being an ependymoma.

Surgery was done in prone position via suboccipital craniotomy and C1 posterior arch excision. Tumor was encountered on opening dura. It was firm, well-vascularized, grayish, encapsulated, and extending into cervical canal compressing the spinal cord. No attachment to dura or choroid plexus was encountered. Gross total excision was achieved and postoperative contrast-enhanced CT showed no residual [Figure 2a–d]. Postoperative course was uneventful and the patient was discharged home 12 days later.

Histopathological evaluation [Figure 2e and f] revealed a meningeal neoplasm with diffuse architecture and patternless arrangement of tumor cells with interspersed collagen fibrils. Tumor cells appear clear with fine chromatin and inconspicuous nuclei. MIB-1-labeling index was reported to below 1%. Final diagnosis was clear-cell meningioma, World Health Organization grade II.

Meningiomas occurring primarily in fourth ventricle are rare entities and are believed to be originating from choroid plexus or tela choroidae.[1,3] Clear-cell

Access this article online	
Quick Response Code:	Website: www.surgicalneurologyint.com
	DOI: 10.4103/sni.sni_277_18

How to cite this article: Shah AS, Gupta R, Singhal G, Jagetia A, Singh D. Fourth ventricle meningioma with cervical extension: An unusual entity. Surg Neurol Int 2018;9:237. http://surgicalneurologyint.com/Fourth-ventricle-meningioma-with-cervical-extension:-An-unusual-entity/

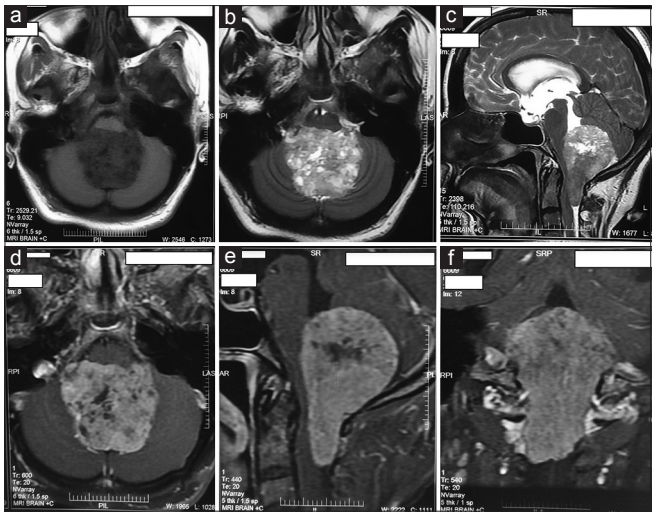

Figure 1: Contrast-enhanced MRI of brain showing fourth ventricle occupying mass lesion extending into bilateral foramen of Luschka and into cervical cord which is hypointense on T1W axial (a); heterogenous hyperintense on T2W axial (b) and sagittal (c); and heterogeneously enhancing on contrast administration on axial (d), sagittal (e), and coronal (f) images

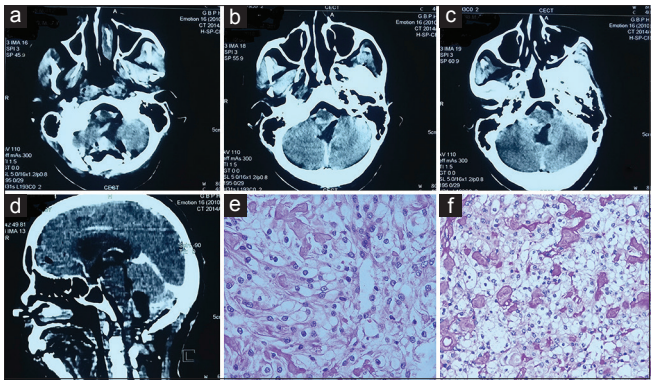

Figure 2: Postoperative contrast enhanced computed tomography. (CECT) imaging showing complete excision of mass lesion on axial (a–c) and sagittal (d) images. Histopathological photographs of hematoxylin–eosin stain section (20× magnification) (e) showing patternless arrangement of tumor cells with interspersed collagen fibrils and clear cytoplasm. Periodic acid–Schiff–diastase staining (f) showing breakdown of glycogen and clear cytoplasm suggestive of clear-cell meningioma

meningiomas occur most commonly within cerebellopontine angle and spine. Other unusual locations reported are brainstem and fourth ventricle.[2] Clear-cell meningiomas behave aggressively and are associated with poor prognosis and high recurrence rates. Long-term follow-up is thus recommended in such patients.[2]

Preoperative diagnosis of meningioma is difficult but should be kept in mind as differential as they differ in terms of surgical challenge and clinical outcome as compared to other tumors in this location.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Alver I, Abuzayed B, Kafadar AM, Muhammedrezai S, Sanus GZ, Akar Z. Primary fourth ventricular meningioma: Case report and review of the literature. Turk Neurosurg 2011;21:249-53.
2. Burgan O, Bahl A, Critcher V, Zaki H, McMullan P, Sinha S. Clear cell meningioma of the fourth ventricle in a child: A case report and literature review. Pediatr Neurosurg 2010;46:462-5.
3. Shrestha R, Yue-Kang Z, Chao Y. Fourth ventricular meningioma in an adult: Case report and review of the literature. Indian J Neurosurg 2012;01:161-4.