Third ventricle ganglioglioma

see also Intraventricular ganglioglioma

2017

Hemorrhagic ganglioglioma of the third ventricle with atypical pathological findings [1].

2016

A 20-year-old man presented with a 3-month history of headache, vomiting, and progressive loss of vision. Examination revealed bilateral papilledema. CT of the brain revealed an isodense lesion in the posterior third ventricle region, with specks of hyperdensity on plain images and mild enhancement on contrast, causing obstructive hydrocephalus.

On MRI, the lesion was well defined, isointense on T1-weighted images, hyperintense on T2-weighted images, and enhancing uniformly and well on contrast, with no areas of bleed, and causing obstructive hydrocephalus. Serum and ventricular cerebrospinal fluid (CSF) [collected by ventricular tap] analyses for markers (beta human chorionic gonadotropin and alpha fetoprotein levels) were normal. He underwent a right-sided Poppen's approach and gross total resection of the tumor. The lesion was heterogenous, soft and suckable, with few calcified areas, and was relatively avascular. Postoperative contrast-enhanced CT scan of the brain showed no residual lesion

Histopathology showed features of ganglioglioma having the characteristic biphasic morphology with the glial component having a pilocytic morphology, with sheets of oligodendroglia-like cells in a fibrillary stroma, and the presence of eosinophilic granular bodies.

Degenerative atypia and small multinucleate cells were seen. Entrapped large ganglion cells with dystrophic changes and perivascular lymphocytic infiltrates were seen. No calcification was noted. The glial zones were diffusely positive for GFAP.

Synaptophysin and phosphorylated neurofilament was seen accumulating within the dysplastic ganglionic element. MIB-1 labeling was low. A histological diagnosis of ganglioglioma (WHO Grade I) was made. A contrast-enhanced brain MRI of the patient at 3-month follow-up showed no residual lesion. Hydrocephalus had resolved without any need for a ventriculoperitoneal shunt. The patient was on follow-up and asymptomatic at 12 months after surgery.

In the posterior third ventricle region, the pineocyte has been described as a multipotential cell that can differentiate into neuronal and glial cells, and is regarded as the possible cell of origin of a ganglioglioma.

Posterior third ventricle region gangliogliomas have been only reported in eight cases previously

In view of a well-defined lesion in the posterior third ventricular region, enhancing well on contrast, in a young patient, the close differential diagnosis includes a germinoma/germ cell tumor and pineocytoma. Hence, serum and ventricular CSF analysis is usually performed for tumor markers prior to considering resective surgery, as was done in our patient. Complete surgical resection should be considered when the intraoperative squash cytology suggests a benign tumor and provides a good

outcome. Surgical approach may be influenced by the choice of the surgeon. We preferred the Poppen's approach because of better exposure of the pineal region anatomy. Radiotherapy has been rarely given for residual tumors.[5] Ganglioglioma, when occurring in the pineal region, presents with raised intracranial pressure. Complete tumor excision, as was done in the present case, should be performed to obtain a good neurological outcome. These lesions could be considered in the differential diagnosis when the intraoperative cytology suggests a pineocytoma/benign glial tumor.

2007

Shono et al. from the Department of Neurosurgery, Graduate School of Medical Sciences, Kyushu University, 3-1-1 Maidashi, Higashi-ku, Fukuoka, 812-8582, Japan, report on two cases of gangliogliomas in the third ventricle in a 34-year-old woman and in a 52-year-old man. One patient presented only with headaches, and the other presented symptoms associated with panhypopituitarism and diabetes insipidus. In the first case the tumor in the middle portion of the third ventricle was successfully removed by a transcallosal subchoroidal approach. In the second case the hemorrhagic tumor was located in the anterior floor of the third ventricle and was removed by an anterior inter-hemispheric trans-lamina terminalis approach. To date, follow-ups of both patients have involved no adjuvant therapy, and there have been no signs of tumor recurrence on magnetic resonance images [2].

1)
Miyake Y, Mishima K, Suzuki T, Adachi JI, Sasaki A, Nishikawa R. Hemorrhagic ganglioglioma of the third ventricle with atypical pathological findings. Brain Tumor Pathol. 2017 Jun 17. doi: 10.1007/s10014-017-0290-z. [Epub ahead of print] PubMed PMID: 28624861.
2)
Shono T, Tosaka M, Matsumoto K, Onaka S, Yamaguchi S, Mizoguchi M, Iwaki T, Nakazato Y, Sasaki T. Ganglioglioma in the third ventricle: report on two cases. Neurosurg Rev. 2007 Jul;30(3):253-8; discussion 258. Epub 2007 May 10. PubMed PMID: 17492319.