OLGU SUNUMU / CASE REPORT

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Lateral ventrikül içi yerleşimli primer oligodendroglioma

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SUMMARY

Primary oligodendroglioma of the lateral ventricle

Oligodendrogliomas rarely occur primarily in the ventricular system. They are presented distinct clinical features when compared to more common hemispheric counterparts. We have reported a case of primary oligodendroglioma in the left lateral ventricle. The tumor was partially resected, a ventriculoperitoneal shunt was placed, and the patient had postoperative radiation therapy. Oligodendrogliomas of the lateral ventricle are rare but should be included in the differential diagnosis of intraventricular tumors.

Key words: *Oligodendroglioma, treatment, ventricle*

ÖZET

Oligodendrogliomlar birincil olarak ventriküler sistemde nadiren görülür. Daha yaygın olarak görülen hemisferik yerleşimli muadillerine kıyasla farklı klinik özellikler gösterir. Biz birincil olarak sol lateral ventrikülde yerleşmiş oligodendrogliomu olan bir olguyu rapor ettik. Tümör kısmen çıkarıldı, ventriküloperitoneal şant yerleştirildi ve hasta operasyon sonrası radyoterapi gördü. Lateral ventrikülün oligodendrogliomları nadir görülür ancak ventrikül içinde yerleşmiş tümörlerin ayırıcı tanısında düşünülmelidir.

Anahtar Kelimeler: *Oligodendrogliom, tedavi, ventrikül*

Introduction

Oligodendrogliomas are well differentiated, slowly growing but diffusely infiltrating cortical and subcortical tumors. Although most of them involve the frontal and frontotemporal cortex, a small proportion of them are seen in the ventricular walls. They are generally dichotomized into grade II (low grade) and grade III (high grade) tumors according to World Health Organization criteria. Primary intraventricular oligodendroglioma is quite uncommon with the limited number of cases reported in the literature (1-4). Intraventricular oligodendrogliomas tend to be low-grade lesions and usually present because of signs and symptoms of CSF pathway obstruction and raised ICP (4).

We present a case of primary intraventricular oligodendroglioma that was treated in our clinic.

Case Report

A 28 years old female admitted to our clinic with the complaints of headache, nausea-vomiting and vision blur lasting for 6 months. Her physical and neurological examination was normal. Computed tomography (CT) of the brain showed heterogenous mass with nodular calcification in the left lateral ventricle. On magnetic resonance imaging (MRI) the tumor was heterogeneous intensity on T1 weighted images and and showed heterogenous contrast enhancement. Significant hydrocephalus was also seen (Figure 1). The patient underwent surgery. Interhemispheric transcallosal approach was used to access to lateral ventricle. A grayish-pink, calsificated unencapsulated mass was removed subtotally. Then a ventriculoperitoneal shunt was placed. The postoperative course was uneventful. The patient was referred to radiotherapy. Histopathological examination revealed moderately cellular neoplasm with a typically monotonous pattern of uniformly rounded hyperchromatic nuclei surrounded by prominent clear cytoplasm consistent with oligodendroglioma WHO grade 2 (Figure 2). Immunohistochemical analysis showed that the neoplastic cells were positive for glial fibrillary acidic protein (GFAP) and S100 and negative for epithelial membrane antigen (EMA).

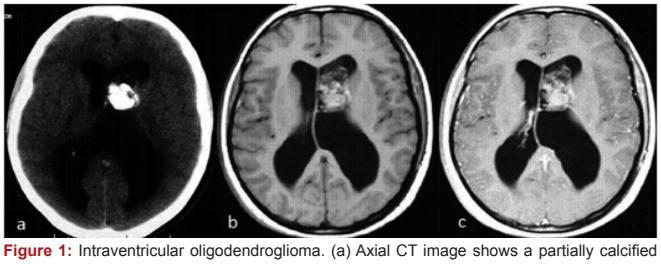

Figure 1: Intraventricular oligodendroglioma. (a) Axial CT image shows a partially calcified

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heterogeneous mass within the left lateral ventricle and dilatation of lateral ventricles. (b) Axial contrast-enhanced T1-weighted MR image shows heterogeneous high signal intensity of the mass (c) Axial contrast-enhanced T1-weighted MR image shows focal areas of enhancement in the mass

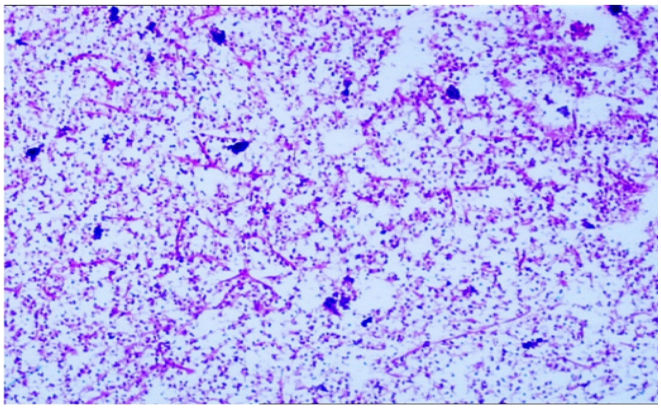

Figure 2: Well-differentiated oligodendroglioma. Photomicrograph (original magnification, ×40; hematoxylin-eosin stain) shows monomorphous tumoral proliferation that consists of round, regular cells with a small, central, hyperchromatic nucleus surrounded by clear cytoplasm.

Discussion

Most oligodendrogliomas present as a single lesion in the cerebral hemispheres. Typically, they are cortical or subcortical; they rarely are found in deep gray structures, and occasionally they may be primarily intraventricular. The precise origin of intraventricular oligodendroglioma remains unclear. Zada et al (4) reported that there are two hypothesis about the cellular precursors and origin of these lesions. Maiuri et al postulated that these tumors originate in the subependymal region and are actually of neuronal origin. Sakai et al reported that these lesions originate from a precursor that is common to both oligodendroglial cells and ependymal cells. They show distinct clinical features when compared to hemispheric counterparts. Patients with intraventricular oligodendrogliomas are younger aged and tend to present with headaches as a consequence of increased intracranial pressure and usually have a shorter duration of symptoms without focal neurologic deficits compared to those whose tumors arise within the brain parenchyma (5).

Intraventricular oligodendrogliomas are rare tumors that have imaging characteristics different from oligodendrogliomas arising in the brain parenchyma. CT shows a high-attenuation lesions that enhance on contrast administration and attach to the ventricular wall. MRI reveals lesion heterogenous signal intensity on T1- and T2-weighted images with cystic and solid components and intense enhancement (6).

Lateral ventricular masses that may be confused with intraventricular oligodendrogliomas are subependymomas, astrocytomas, ependymomas, gangliogliomas, subependymal giant cell tumors, central neurocytomas and meningiomas (2).

It has been suggested that some cases of intraventricular oligodendrogliomas may actually represent central neurocytomas due to the similar imaging and histopathologic findings. Specific immunohistochemical staining methods and electron microscopy should be performed to differentiate them. GFAP is positive in oligodendroglioma, yet negative in neurocytoma (2,4).

Total surgical removal of the tumor should always be the ultimate goal. Adjuvant radiotherapy has been suggested for residual tumor. Local recurrence is common and hence regular surveillance is recommended. Most of the patients undergoing treatment of intraventricular oligodendroglioma requires perioperative ventricular shunting like in our case.

In conclusion, in the presence of a ventricular mass, although even its rarity oligodendrogliomas should kept in mind. Attempted gross total surgical resection followed by adjuvant radiotheraphy will provide to achieve a longer life expectancy and quality.

References

1. Atalay B, Altınörs N, Caner H, Bavbek M, Çekinmez M, Hastürk A. Primary biventricular oligodendroglioma. Turkish Neurosurgery, 2002; 12:138-39.
2. Atasoy Ç, Karagülle T, Erden İ, Akyar S. Primary oligodendroglioma of the lateral ventricle: computed tomography and magnetic resonance imaging findings. Journal of Ankara Medical School, 2002; 55:39-44.
3. Kalkan E, Torun MF, Cengiz ŞL, Erdi MF, Baysefer A. İntraventriküler oligodendrogliomalar. Genel Tıp Dergisi, 2005; 15:161-64.
4. Zada G, McNatt SA, Gonzalez-Gomez I, McComb JG. Anaplastic intraventricular oligodendroglioma: case report and review of the literature. Surg Neurol 2009; 71:693-700.
5. Nioka H, Nakasu S, Nakasu Y, Matsuda M, Handa J. Oligodendroglioma of the lateral ventricle--report of 2 cases and a review. No Shinkei Geka 1987; 15:201-5. (Abstract)
6. Koeller KK, Rushing EJ. From the archives of the AFIP: Oligodendroglioma and its variants: radiologic-pathologic correlation. Radiographics 2005; 25:1669-88.