Ege Journal of Medicine / Ege Tıp Dergisi 2017;56(2):91-92

Unusual localization of medulloblastoma mimicking as meningioma

Menenjiomu taklit eden anormal yerleşimli medulloblastom olgusu

Onur Özgüral[1] Ümit Eroğlu[1] Burak Bahadır[1] Aylin Heper Okçu[2] Hakan Tuna[1]

[1]Ankara University Faculty of Medicine, Department of Neurosurgery, Ankara, Turkey

[2]Ankara University Faculty of Medicine, Department of Pathology , Ankara, Turkey

Abstract

Medulloblastoma is one of the most common primitive neuroectodermal tumors at pediatric age. It is usually located at fourth ventricle originated from vermis. Pontocerebellar angle medulloblastomas are rare and are mostly localized intraaxially. It can be confused with other tumors such as meningioma and schwannoma which are usually seen at this zone. In this report, a 16-year-old girl having medulloblastoma located at the pontocerebellar angle extraaxially and mimicking as meningioma was presented.

Keywords: Medullablastoma, pontocerebellar angle, extraaxial.

Öz

Medulloblastom, pediyatrik çağda en sık görülen primitif nöroektodermal tümör grubundandır. Genellikle vermis kaynaklı ve 4. ventrikül yerleşimlidir. Pontoserebellar açı medulloblastomları oldukça nadir olup çoğunlukla intraaksiyel yerleşimlidir. Bu bölgede sık görülen menenjiom ve schwannom gibi tümörlerle karışabilir. Bu yazıda, 16 yaşında kız çocukta pontoserebellar bölgede ekstraaksiyel yerleşen ve menenjiomu taklit eden medulloblastom olgusu sunulmaktadır.

Anahtar Sözcükler: *Medulloblastom, pontoserebellar açı, ekstraaksiyel.*

Introduction

Medulloblastoma is the most common malign primitive neuroectodermal tumor group at pediatric age. It accounts approximately for 20% of all intracranial pediatric tumors. Many cerebellopontine angle medulloblastomas are intraaxial-located; however, the localization is extraaxial in very few cases (1) .The current report presents a case with extraaxial medulloblastoma with pontocerebellar angle localization.

Case Report

A 16-year-old female patient was admitted to our clinic with headache, dizziness, nausea and swallowing difficulty for about 1 month. Neurological examination revealed right peripheral 7th cranial paralysis, horizontal nystagmus and mild neck stiffness. Imaging assessments showed a homogeneous-enhancing mass in the right pontocerebellar region (Figure-1a,b).

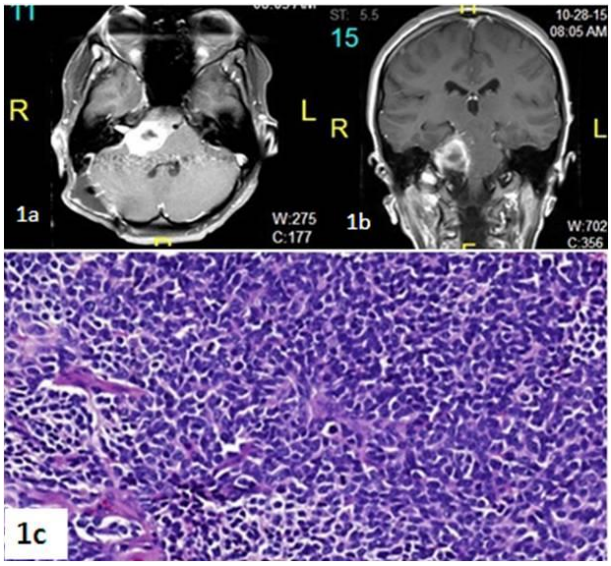

Figure-1. a. Axial image of tumor located pontocerebellar angle. **b.** Coronal image of tumor located pontocerebellar angle. **c.** Hypercellular tumor is composed of sheets of monotonous indifferentiated, mitotically active embryonal cells with oval hyperchromatic nuclei and minimal cytoplasm (Hematoxylen and eosinx320).

Corresponding Author: Onur Özgüral

Ankara University Faculty of Medicine, Department of Neurosurgery, Ankara, Turkey

Received: 08.02.2016 Accepted: 19.04.2016

The patient was hospitalized. First of all, from the right Kocher point ventricular external drainage system placed and then right paramedian suboccipital craniotomy and subtotal tumor excision were performed. There was no additional deficit in postoperative early period except 6th cranial paralysis on the right. Pathology was reported as grade 4 medulloblastoma (Figure-1c).

Written informed consent was obtained from the patient's legal custodian for publishing the individual medical records.

Discussion

Most of the medulloblastomas occurs in the first decade. It typically develops from the primitive neuroectodermal cells at the roof of the fourth ventricle (2). Approximately 2/3 of the cases are originated from vermis at pediatric age (3). The development of this tumor at the cerebellopontine angle may be originated from the residues of external granular layer the cerebellar cortex (4).

Spread to pontocerebellar angle (PCA) may be due to the *foramen luschka* lateral extension or directly exophytic growth of the lesion in the cerebellum or pons. Extraaxial localization without any contact with the cerebellar tissue is quite rare (5).

Regardless of the clinical reflection, it is difficult to distinguish angle medulloblastomas from other tumors located in this region (6).The most common pathologic lesions of cerebellopontine angle are acoustic neurinomas, meningiomas, primary cholesteatomas and epidermoid tumors (7). In our case the tumor was located extraaxially which was extremely rare at pediatric age.

The pathologic lesions of this region are commonly associated with non-specific symptoms such as headache, nausea-vomiting, dizziness and hearing loss (8). Lack of hearing loss and facial paralysis is helpful in distinguishing from acoustic neurinoma, but these symptoms are commonly observed in other PCA tumors (9). The present case had right facial paralysis in the preoperative period.

MR imaging usually shows a heterogeneous-enhancing lesion appearance in clinical terms; however, there may also be a homogenous-enhancing pattern. This may lead to misinterpretation in the preliminary diagnosis. In the present case, the tumor was a homogeneous-enhancing mass in the MR sequences.

The goal of surgical treatment for CPA tumors is histopathological diagnosis, maximum cytoreduction, and restoration of cerebrospinal fluid flow while avoiding brainstem manipulation and cerebellar injury (10). We performed subtotal tumor excision because of peroperative hemorrhage.

Although intracranial medulloblastomas are usually originated from the posterior fossa cerebellar vermis, they may rarely occur at the pontocerebellar angle and extraaxially. Therefore, they may be confused with other tumors such as acoustic neurinoma and meningioma that are frequently seen in this region. This rare localization should be considered during the differential diagnosis.

References

1. Zakhary R, Keles GE, Aldape K., Berger MS. Medulloblastoma and primitive neuroectodermal tumors. 2nd ed. Jr. Churchil Livingstone: 2001:605-15.
2. Gusnard DA. Cerebellar neoplasms in children. Semin Roentgenol 1990;25(3):263-78.
3. Akman T, Aras BA, Güven M, Sen MH, Cosar M. A case of medulloblastoma mimicking astrocytoma located in cerebellopontine, Ege Journal of Medicine 2015;54(3):137-8.
4. Yamada S, Aiba T, Hara M. Cerebellopontine angle medulloblastoma: Case report and literature review. Br J Neurosurg 1993;7(1):91-4.
5. Akay KM, Erdogan E, Izci Y, Kaya A, Timurkaynak E. Medulloblastoma of the cerebellopontine angle-case report. Neurol Med Chir 2003;43(11):555-8.
6. Bahrami E, Bakhti S, Fereshtehnejad SM, Parvaresh M, Khani MR. Extra-axial medulloblastoma in cerebello-pontine angle: A report of a rare case with literature review MJIRI; 2014: 28-57.
7. Moffat DA, Saunders JE, McElveen JT Jr, McFerran DJ, Hardy DG. Unusual cerebello-pontine angle tumours. J Laryngol Otol 1993;107(12):1087-98.
8. Jaiswal AK, Mahapatra AK, Sharma MC. Cerebellopontine angle medulloblastoma. J Clin Neurosci 2004;(11):42-5.
9. Becker RL, Becker AD, Sobel DF. Adult medulloblastoma: Review of 13 cases with emphasison MRI. Neuroradiology 1995;37(2):104-8.
10. Dalgıç A, Uçkun Ö, Okçu AH, Okay Ö, Dağlıoğlu E, Ergüngör F. Uncommon tumor of cerebellopontine angle: Report of an adult medulloblastoma. J Neurol Sci 2011;28:(2)273-7.