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Case Report / Olgu Sunumu

Central Neurocytoma Presenting Headache and Papilledema: A Case Report

Olgu Sunumu: Baş Ağrısı ve Papil Ödem Belirtileri ile Santral Nörositoma

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Abstract

Central neurocytomas are WHO grade II neuroepithelial intraventricular tumors with fairly characteristic imaging features that can cause obstructive hydrocephalus and manifest as increased intracranial pressure. Here we present the case of a 32-year-old man with no known chronic disease presenting with headache and papilledema of 2 months duration. Brain magnetic resonance imaging revealed a mass lesion growing from the septum pellucidum level into both lateral ventricles, measuring approximately 67x60 mm in size, containing cystic areas consistent with neurocytoma.

Keywords: Brain tumor, central neurocytoma, hydrocephalus, papilledema

Öz

Santral nörositomalar, obstrüktif hidrosefaliye neden olabilen ve kafa içi basınç artışı belirtileri ile ortaya çıkan oldukça karakteristik görüntüleme özelliklerine sahip WHO derece II nöroepitelyal intraventriküler tümörlerdir. Burada, bilinen kronik hastalığı olmayan, baş ağrısı ve 2 aydır papil ödem şikayetleri olan 32 yaşında bir erkek hastayı sunuyoruz. Beyin manyetik rezonans incelemesinde septum pellucidum seviyesinden her iki lateral ventriküle doğru büyüyen, yaklaşık 67x60 mm boyutlarında, kistik alanlar içeren kitle lezyonu görüldü.

Anahtar Kelimeler: Beyin tümörü, santral nörositoma, hidrosefali, papil ödem

Introduction

Central neurocytoma (CN) is a rare, benign brain tumor usually found in brain ventricles, which can cause obstructive hydrocephalus and features suggestive of increased intracranial pressure. CN is relatively rare, comprising 0.1-0.5% of all brain tumors. CN is the most prevalent among young adults, and nearly 25% of all cases are reported in people in their thirties. Most cases of CNs are found in the anterior half of the lateral ventricle, although some have been reported being found in the third and fourth ventricles (1).

CN may increase the intracranial pressure by impeding the flow of the cerebrospinal fluid through the intraventricular foramen, which can lead to hydrocephalus. Patients may also experience nausea, vomiting, headache, seizures, decreased consciousness, weakness, and memory or vision problems (2). Magnetic resonance imaging (MRI) provides the initial step toward the diagnosis of these tumors. However, definitive diagnosis can be made through histopathology (3). Surgical management with a gross total resection (GTR) is the gold standard treatment for CN, which often has an excellent prognosis and minimizes the risks of CN recurrence. Adjuvant radiotherapy and sometimes chemotherapy are added when complete resection is not possible or extraventricular extension is present, although their benefit is not well established (4).

Case Report

A 32-year-old man with no known chronic disease presented to our outpatient department with progressive general weakness, headache, and bilateral papilledema for 2 months. He previously had moderately intense diffuse headache predominantly on the

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vertex for the last 1 year. Headache was not associated with nausea, vomiting, or a change in the head position.

Brain MRI revealed a mass lesion growing from the septum pellucidum level into both lateral ventricles, measuring 67x60 mm in size, containing cystic areas in T2-weighted images and solid components (Figures 1, 2, 3, 4). Vascular structures that show signal intensity were observed inside the mass lesion. Findings are typical for CN.

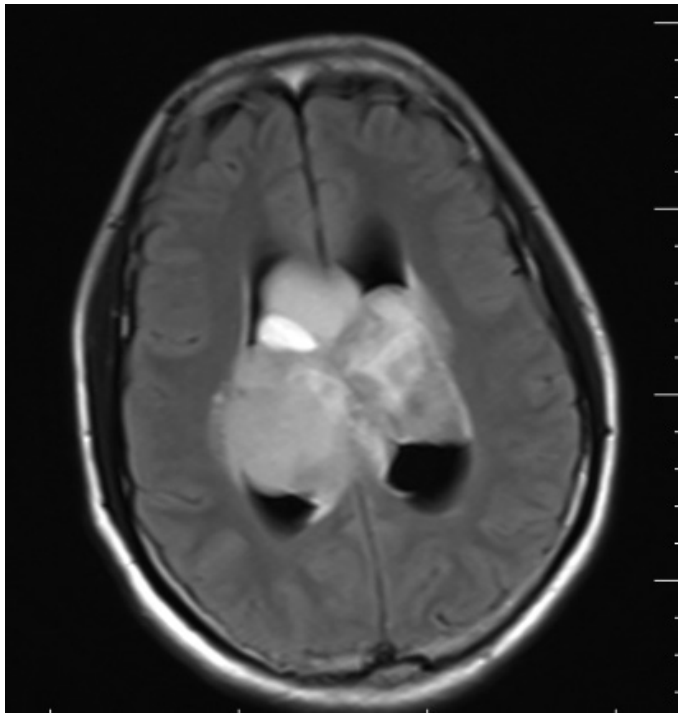

Figure 1. Brain magnetic resonance T2 axial image

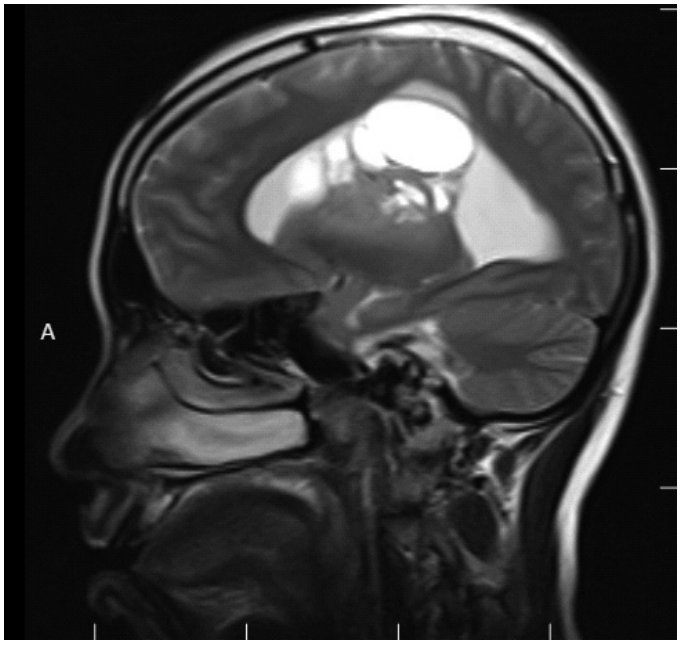

Figure 2. Brain magnetic resonance T2 sagittal imaging

Discussion

CN is a rare intraventricular brain tumor that affects young adults and presents with increased intracranial pressure secondary to obstructive hydrocephalus (1,5). This patient had a moderately intense headache, of which he did not seek medical attention. On examination, he had generalized body weakness and papilledema.

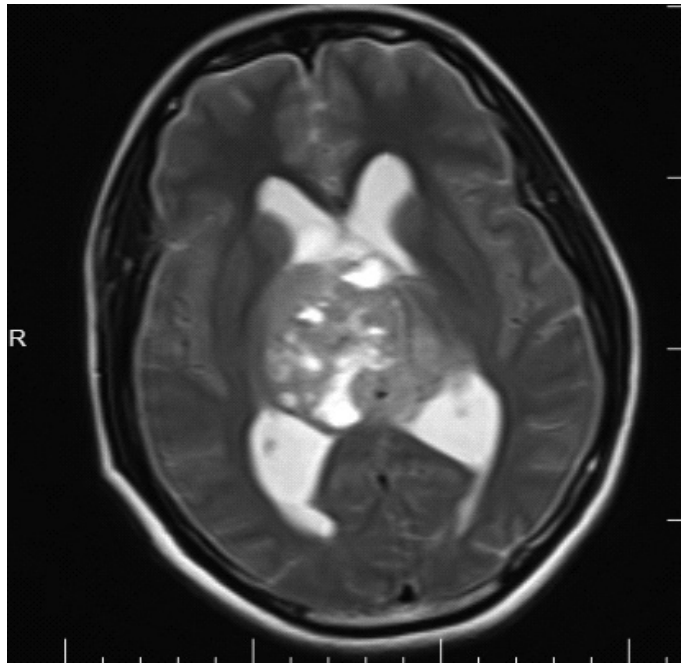

Figure 3. Brain magnetic resonance T2 FLAIR axial imaging
FLAIR: Fluid-attenuated inversion recovery

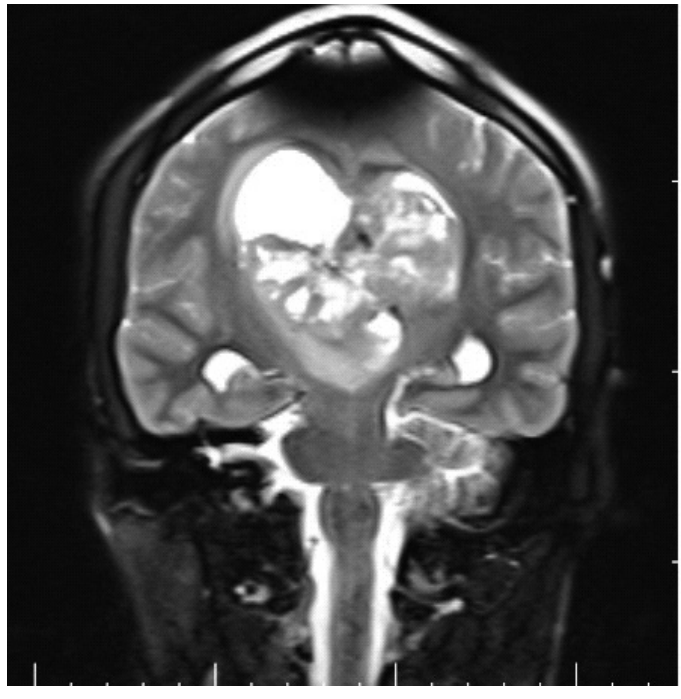

Figure 4. Brain magnetic resonance T2 coronal imaging

MRI is helpful in refining the differential diagnosis.

CN is usually isointense on T1, with variable intensities on T2 imaging. CN shows heterogeneous enhancement patterns, and globular calcifications resembling the classic "soap-bubble" in brain imaging. Histologically, they resembled oligodendrogliomas and were originally thought to be unusual intraventricular oligodendrogliomas until their neuronal characteristics were established by electron microscopy. Currently, immunostaining for synaptophysin can confirm the neuronal nature (6). In our case, brain MRI showed a mass lesion growing from both lateral ventricles, which was isointense in T1- and high signal in T2-weighted images as well as solid components. Vascular structures show signal intensity inside the mass lesion, and the findings are typical for CN. Histopathology and MRI spectroscopy could not be performed due to unavailability. Surgical management with GTR is currently the gold standard treatment for CN, which often has an excellent prognosis and minimizes the risks of CN recurrence. GTR is performed in 30-50% of all patients with CN. Radiotherapy is indicated if GTR cannot be performed (7). In our case, we referred the patient to the neurosurgery department for a possible surgery. However, the patient was recommended to go abroad from Somalia so that he can undergo surgery in a higher health institution.

CN is a rare benign brain tumor usually located in the ventricles, which can cause obstructive hydrocephalus and features of increased intracranial pressure. Herein, we presented a case of lateral ventricle neurocytoma presenting with headache and bilateral papilledema.

Brain MRI study should definitely be performed in patients presenting with headache and papilledema, especially in young patients to evaluate pathologies that cause increased intracranial pressure. With early diagnosis and treatment, complications that can lead to severe morbidity and mortality can be prevented. With this case report, we wanted to recall the rarity of CN.

Ethics

Informed Consent: Written consent was obtained from the patient.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.S.H., Y.Y., Concept: M.S.H., Y.Y., Design: M.S.H., Y.Y., Data Collection or Processing: M.S.H., Analysis or Interpretation: M.S.H., Y.Y., Literature Search: M.S.H, Writing: M.S.H.

Conflict of Interest: No conflict of interest was declared by the authors.

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References

1. Chen H, Zhou R, Liu J, Tang J. Central neurocytoma. J Clin Neurosci 2012;19:849-853.
2. Hassoun J, Söylemezoglu F, Gambarelli D, et al. Central neurocytoma: a synopsis of clinical and histological features. Brain Pathol 1993;3:297-306.
3. Shin JH, Lee HK, Khang SK, et al. Neuronal tumors of the central nervous system: radiologic findings and pathologic correlation. Radiographics 2002;22:1177-1189.
4. Rades D, Fehlauer F. Treatment options for central neurocytoma. Neurology 2002;59:1268-1270.
5. Chen CL, Shen CC, Wang J, Lu CH, Lee HT. Central neurocytoma: a clinical, radiological and pathological study of nine cases. Clin Neurol Neurosurg 2008;110:129-136.
6. Smith AB, Smirniotopoulos JG, Horkanyne-Szakaly I. From the radiologic pathology archives: intraventricular neoplasms: radiologic-pathologic correlation. Radiographics 2013;33:21-43.
7. Leenstra JL, Rodriguez FJ, Frechette CM, et al. Central neurocytoma: management recommendations based on a 35-year experience. Int J Radiat Oncol Biol Phys 2007;67:1145-1154.