



Olfactory groove meningioma presenting with major depressive disorder symptoms: A case report

Majör depresif bozukluk belirtileri ile başvuran olfaktör oluk menenjiyomu: Bir olgu sunumu

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Abstract

Brain tumors without giving neurological symptoms yet; it can also occur with a wide range of psychiatric symptoms such as anxiety, panic attacks, depression, eating disorders, personality change, vision hallucinations and mania. Unfortunately, the diagnosis of brain tumor might be delayed in patients whose clinical symptoms are like these. Brain imaging techniques should be performed especially in patients who don't respond to psychiatric drug treatment and have no neurological symptoms. In this article, a female patient who presented to our psychiatry outpatient clinic with symptoms of depression, accompanied by psychosis symptoms in later periods, and whose mass was detected as a result of magnetic resonance imaging, is discussed in the light of literature studies. Here, we aimed to emphasize the importance of neurological examination and brain imaging methods in patients who come to psychiatry especially with atypical symptoms.

Key Words: Depression, psychosis symptoms, brain tumors, neuro-imaging.

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Öz

Beyin tümörleri henüz nörolojik semptomlar vermeden; anksiyete, panik atak, depresyon, yeme bozuklukları, kişilik değişikliği, görme halüsinasyonları ve mani gibi çok çeşitli psikiyatrik semptomlarla da ortaya çıkabilir. Ne yazık ki, klinik semptomları böyle olan hastalarda beyin tümörü tanısı gecikebilmektedir. Beyin görüntüleme teknikleri özellikle, psikiyatrik ilaç tedavisine cevap vermeyen ve nörolojik semptomları olmayan hastalarda mutlaka yapılmalıdır. Bu yazımızda psikiyatri polikliniğimize depresyon belirtileri ile başvuran, ileri dönemlerde psikoz belirtilerinin de eşlik ettiği, çekilen kontrastlı beyin manyetik rezonans görüntüleme sonucunda kitle tespit edilen kadın hasta, literatür araştırmaları ışığında tartışılmaktadır. Biz burada özellikle atipik semptomları olan psikiyatri hastalarında nörolojik muayene ve beyin görüntüleme yöntemlerinin önemini vurgulamayı amaçladık.

Anahtar Kelimeler: Depresyon, psikoz belirtileri, beyin tümörleri, nöro-görüntüleme

Introduction

Brain tumors are manifested by headache, epileptic seizure, focal neurological deficit, cognitive or behavioral disorder. It is also accompanied by various symptoms such as forgetfulness, slowing speech speed, difficulty in maintaining mental functions, loss of interest in daily activities, personality changes, inability to hear high-frequency sounds [1, 2].

The localization of tumor, its edema and mass effect cause the dysfunction of neuronal foci and therefore psychiatric symptoms occur [3]. While a tumor in the dorsolateral prefrontal region may lead to deficiencies in executive function, a tumor in the orbitofrontal region may lead to disinhibition, medial-frontal region tumor may lead apathy and amotivation and temporal limbic tumors may lead to psychosis [4]. Approximately 90% of brain tumors that cause psychiatric symptoms are located in the frontal lobe. However, these symptoms may occur as a result of the affection of the temporal lobe, thalamocortical structures, cerebral white matter, long fiber systems and corpus callosum. Therefore, patients may be misdiagnosed with many psychiatric disorders, mood disorders, anxiety disorders, or psychotic disorders, during the first examination [5].

Psychiatric symptoms rarely accompany the clinical picture before the diagnosis of brain tumor [6]. Depression, anxiety disorder, mania, psychosis, personality changes and eating disorders are usually observed among psychiatric diagnostic symptoms [2]. Depressive disorder has been reported in % 2.5-15.4 of primary brain tumors [7]. Depression is seen 44% of patients who has primary and metastatic whole brain tumors and it is accompanied by functional impairment, cognitive dysfunction, and poor quality of life according to Mainio et al. [8, 9]. Depression symptoms can be seen at all stages of brain tumors (before, during or after diagnosis / treatment). It has been reported that depression is more common in frontal lobe tumors. More specifically, left frontal lobe tumors were more associated with depression [3, 7].

Meningioma is the most common primary central nervous system tumor responsible for almost 37% of all cases [10]. Meningioma frequently is seen in middle-aged or elder people and compared to men, women have a 2-fold risk of meningioma. It usually grows slowly and is asymptomatic. The diagnosis is usually made by neuroimaging techniques or autopsy [10-12]. Total surgical resection is recommended in its treatment, but this may be difficult for deeply located skull base tumors [13]. Depression is the most common psychiatric symptom in these patients with meningioma and affects more than 20% of patients [14].

In this paper, we aimed to emphasize that the importance of using brain imaging methods in patients with atypical depression or treatment-resistant depression because of the underlying organic causes such as meningioma.

Case report

From a 55-year-old female patient who received written consent for a case report, it was learned that she was a primary school graduate and a housewife, lived alone, and that his wife died 7 years ago. There were symptoms of depression approximately for 3 months, such as inability to do household chores, lethargy, stagnation, retreat, malaise, unwillingness, irritability, feeling worthless, slow and less speech, and not leaving home. She did not have any additional illness, and she had been treated with antidepressant treatment for 8 months after she lost her husband 7 years ago. There was no family history of psychiatric illness. Routine blood tests were requested and it was

observed that hemogram, serum iron, vitamin B12, folic acid, thyroid hormone results were at a normal level. The Hamilton depression scale (HDS) score was 25. As a result of the mental examination of the patient, major depressive disorder of melancholic type was considered according to Diagnostic and Statistical Manual of Mental Disorders-5 diagnostic criteria and treatment was started with 75 mg venlafaxine. It was observed that the patient was resistant to antidepressants as a result of regular monthly mood assessment. Although the dose of venlafaxine was increased to 225 mg in the 5th month of treatment, 30 mg of mirtazapine and 5 mg of aripiprazole were added; there was no regression in her complaints. Besides she had urinary incontinence 3 to 4 times in the last month and did not care about this situation, she sat with her wet clothes for hours. She also had symptoms like hearing difficulties, visual hallucinations, washing clothes in the kitchen sink, forgetting the faucet open, mixing the names of children. In the mental state examination, her thoughts were purposeful, but association of her ideas were slow and prone to disintegration, she was speaking unreasonably, she had disorganized behaviors, delusions of persecution and vision hallucinations, and deterioration in the place-time orientation. The positive and negative syndrome scale (PANSS) was 87. In addition, she had ataxic gait, dementia-like cognitive symptoms and her mini mental test result (MMT) was 12. Therefore, a contrast-enhanced MRI examination was requested to analyze organic etiology. In neuroimaging there was a giant mass on olfactory groove, extra axial location, that extending up to the vertex level in the superior, filling the anterior cranial fossa, pushing falx cerebri to left, pressing lateral ventricles, genu segment of corpus callosum and adjacent brain parenchyma. The size of mass measured 70x57x64 mm, it had homogeneous contrast enhancement after contrast injection. There were intense vasogenic edema around the mass in the brain parenchyma. It was considered an olfactory groove meningioma (Figure 1).

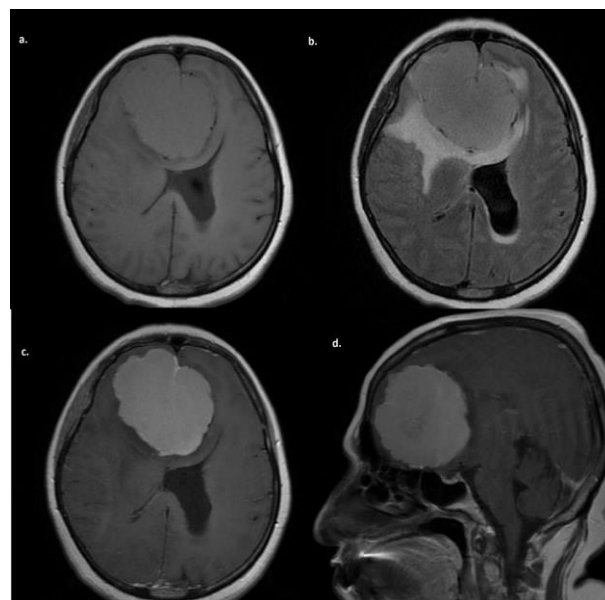


Figure 1: Preoperative brain MRI examination: The images without contrast are axial T1-weighted (a) and axial T2-FLAIR-weighted (b) MRI scans. There is compression of the lateral ventricle and genu segments of corpus callosum. There is intense vasogenic edema around the mass in the axial T2 FLAIR-weighted MRI scan. It shows intense homogeneous enhancement in contrast-enhanced axial T1-weighted (c) and sagittal T1-weighted (d) MRI scans.

The patient was consulted to neurosurgery, and the operation was planned one day later, and her psychiatric treatment was terminated immediately. Post-operative CT image is shown in figure 2. The biopsy taken from the surgical material revealed that the tumor was meningioma. The patient's symptoms regressed immediately after surgery; It was observed that her gait improved, her communication improved and her psychotic symptoms disappeared. One week after surgery, HDS score was 6, MMT result was 22, and PANSS score was 42 (Figure 2).

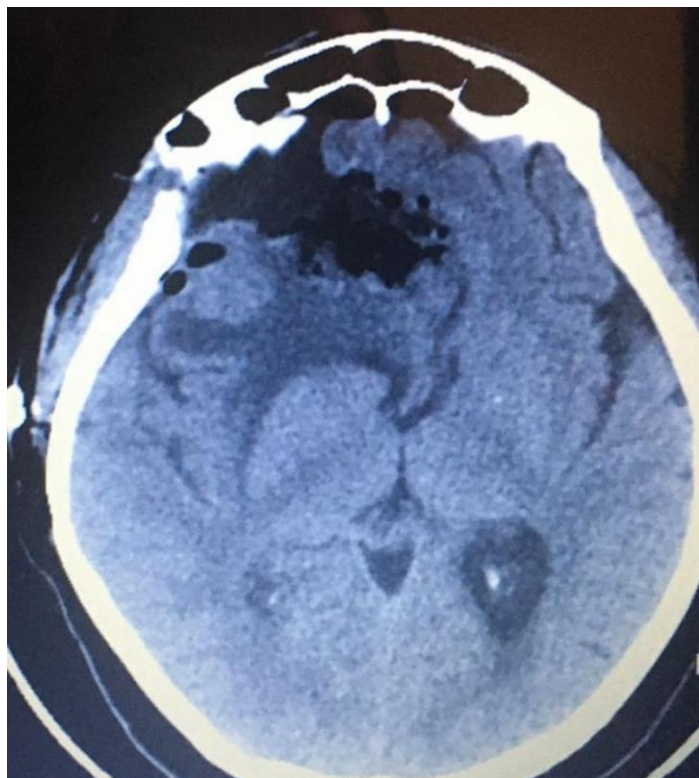


Figure 2: In the post-operative CT image, there is postoperative air density and a hypodense vasogenic edema.

Discussion

Olfactory groove meningiomas are benign, slow growing tumors originating from dura mater covering the surface of lamina cribrosa. Slowly growing mass begins to compress both frontal lobes over time and reveals clinical symptoms. Sometimes the tumor may reach large sizes without clinical symptoms. The first clinical sign is usually anosmia. Mostly, visual impairment and dementia may be developed on patients after a few years. As the mass grows, ipsilateral anosmia which the patient often does not realize, optic atrophy, optic disc edema due to contralateral eye stasis, visual impairment due to posteriorly located tumors pressing the optic nerve, urinary incontinence, epileptic seizure and mood changes can also be observed [15].

The effect of tumor localization on the emergence of psychiatric symptoms is demonstrated by studies conducted. Some common psychiatric symptoms are seen more often in certain brain area tumors. For example, It can be symptoms such as disinhibition in orbitofrontal region tumors, apathy, mania or psychosis in medial frontal tumors, psychosis in the tumors which affects third ventricle and surrounding structures [4]. In diencephalon and pituitary gland tumors, vegetative symptoms can be seen as a variant of depressive disorders [16].

In the 1980s, Owens et al. [17] did a cross-sectional study of 118 patients with schizophrenia, they found that one patient a meningioma in the left frontal lobe. The patient was reported to have hearing hallucinations and no other focal neurological findings. This means that the meningioma clinic can be asymptomatic and sometimes psychotic symptoms can be part of tumor symptoms. In a study in which 57 patients with supratentorial meningioma were prospectively studied, psychiatric symptoms were more common in temporal tumors than frontal tumors [14]. It was found that patients with frontal meningioma had depression symptoms, patients with base of frontal lobe and sphenoid wing meningioma had mania or depressive symptoms, patients with suprasellar and temporal convex meningioma had symptoms of delusional disorder symptoms. In accordance with these datas, in our case, meningioma itself was asymptomatic, and the clinical picture was completely based on depressive symptoms. In the following weeks, psychotic symptoms were added first and then neurological deficits appeared.

In a study conducted; it was found that apathy symptoms were more common in individuals with frontal lobe involvement, and apathy was significantly reduced after surgical resection [18]. This situation is an evidence proves that the localization of the tumor and psychiatric symptoms are related. Similarly; in our case, it was observed that both depressive and psychotic symptoms improved spontaneously after resection of the tumor.

Researches on clinical and cost-effectiveness of depression, mood disorders, especially in first-episode psychosis patients, does not recommend routine brain imaging techniques [19]. However, this neuroimaging techniques may cause skipping of many underlying organic causes. Thus, a cranial mass was detected in 27 of the autopsies of 200 patients who died in a psychiatric hospital in South Africa between 1970 and 1973 [20]. This indicates that intracranial lesions are mostly undiagnosed in patients treated mainly for psychiatric symptoms. In a study by Keschner et al. Reported that 78% of 530 patients diagnosed with brain tumors had psychiatric symptoms and 18% admitted to the hospital with psychiatric symptoms before the diagnosis of brain tumor [21]. Similarly, in our case the patient was admitted with psychiatric symptoms later meningioma was detected.

In conclusion, tumors like meningioma may initially come with psychiatric symptoms to the outpatient clinics. Therefore, medical doctors should approach more carefully patients who have atypical clinical features of depressive disorder like personality changes and who do not respond to the usual treatment. A detailed history, medical examination and selection of appropriate brain imaging techniques are important for early diagnosis. Because treatment will be shaped according to the tumor and its complications like psychiatric symptoms. Psychiatric symptoms vary according to the localization and lateralization of tumors. Along with technological advances, correlation studies between anatomical location and psychiatric symptoms can provide associations that were not previously available. This will help better categorize and better understand of psychiatric symptoms, disorders and symptom structures caused by other brain tumors, including meningioma.

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