OLGU SUNUMU

Diagnostic Dilemmas in Neurologically Silent Tumors

Nörolojik Açıdan Sessiz Tümörlerde Tanısal İkilemler

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ABSTRACT

Intracranial tumors often present as a combination of neurologic, psychiatric and cognitive disorders. This article presents two cases of patients who developed psychiatric symptoms but organic brain lesions were diagnosed when they underwent neuroimaging studies. The first case, 75 years old female, presented depressive symptoms, and the second case, 43 years old male, presented with atypical psychiatric symptoms but their diagnoses were delayed because they were treated for psychiatric disorders. We recommend neuroimaging should be considered in patients with presence of previous psychiatric symptoms with additional atypical symptoms, poor response to given psychiatric treatment, late-onset of psychiatric symptoms.

Key words: psychiatry and tumors

ÖZET

İntrakranyal tümörler genellikle, nörolojik, psikiyatrik ve kognitif bozukluklarla karşımıza gelirler. Bu makalede psikiyatrik semptom geliştiren ancak nöro görüntüleme sonrasında organik beyin lezyonları teşhis edilen iki olgu bildirilmektedir. İlk olgu, depresif semptomlarla gelen 75 yaşında bir bayandır, ikinci olgu atipik psikiyatrik semptomlarla gelen, bu nedenle psikiyatrik tedavi gördüğünden dolayı teşhisi geç kalmış bir hastadır. Sonuç olarak, önceden psikiyatrik semptomları olup da, ilave atipik semptomlar geliştiren, psikiyatrik tedaviye zayıf cevap veren ve psikiyatrik semptomları geç dönemde ortaya çıkan olgularda nörogörüntülemeyi önermekteyiz.

Anahtar sözcükler: psikiyatri ve tümörler

INTRODUCTION

Intracranial tumors often present as a combination of neurologic, cognitive and psychiatric disorders, including depression, anxiety disorders, personality disorders, mania, psychosis, and anorexia nervosa (1-6). It was reported that 1/1000 of hospitalized psychiatric patients have brain tumors (7). Any patient 40 years of age or older with a change in mental status, cognitive or emotional, should have neuroimaging of the brain (8), particularly if there is no clear alternative etiology. Any patient with a psychiatric presentation who has specific neurobehavioral or neurologic findings or an unexpectedly poor response to psychopharmacologic treatment should also have brain imaging (8).

We report two patients presenting psychiatric symptoms but their neuroimaging studies showed the existence of brain tumors. These case reports update the importance of frontal and temporolimbic systems in the pathogenesis of neurobehavioral disorders. More importantly, the cases are interest of manifesting and emphasizing the diagnostic criteria to consider the neuroimaging in 'neurologically silent' tumors.

CASE I

A 75-year-old right-handed female patient, presented to our neuropsychiatry unit with one month history of marked apathy and restlessness. During 15 days prior to this

admission, the patient developed depressive symptoms such as social withdrawal, hypersomnia, poor appetite, and decreased energy that were treated by her primary medical physician with citalopram 20 mg/day, and sulpiride 100 mg/day. She had not any psychiatric history.

Mental status examination revealed depressive mood, blunted affect, and marked mental slowness. Neurologic examination revealed prominent rigidity and praxis deficits on both upper extremities but more on the the left side. The differential diagnoses were major depressive disorder, mood disorder due to organic brain disorder, and parkinsonism due to antipsychotic medication. Her Hamilton Depression Rating Score (HAM-D) on a 17-item scale was 26. She scored a 18 out of 30 on the Mini Mental Status Exam and demonstrated marked disturbance in executive function and short time memory.

Her medical history revealed hypertension for ten years being trated with amlodipine 10 mg/day, lisinopril 20 mg/day and hydrochlorthiazide 25 mg/day. Her physical examination was within normal limits other than the findings mentioned above. She was hospitalized for further investigation and the treatment of extrapyramidal side-effects of the antipsychotics. Upon admission, her antipsychotic medication was discontinued. After twelve hours of discontinuation of the antipsychotic drug, the rigidity of the upper extremities resolved. Her serum biochemistry laboratory results were within normal limits.

Brain magnetic resonance imaging (MRI) revealed a mass (4.4 cm x 5 cm x 6 cm), occupying the right superior frontal region and extending into the prefrontal region, and the body of corpus callosum with midline shift to the left side (Figure 1). Electroencephalography (EEG) showed marked slowing bilaterally in frontal regions, predominantly in the right side. The patient was diagnosed with mood disorder due to a brain tumor.

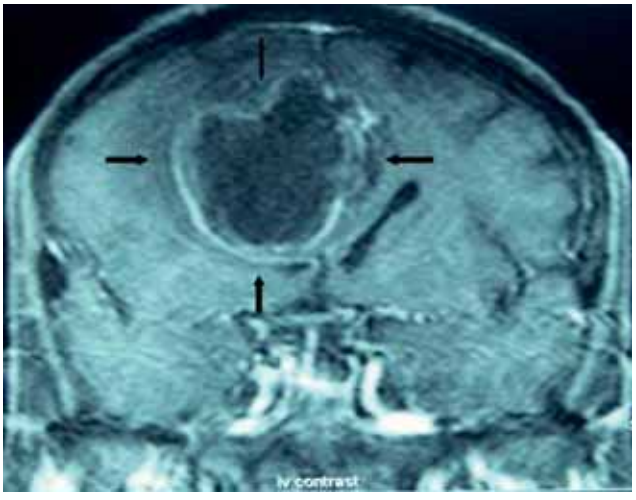

Figure-1: Coronal MRI of the case-I showing right-sided frontal tumor

Neuropsychological tests including subgroups of Wechsler Memory Scale–Revised (WMS-R), Benton face recognition test for visuospatial perception, frontal executive function tests, verbal and visual memory tests were administered. Her orientation was intact. She had impairment of short-term and delayed recall. She performed worse in visual memory and visuospatial perception tests. Results of clock-drawing, figure copy tests, and abstracting were abnormal.

She was started on dexamethasone 16 mg/day intravenously for brain edema. She was transferred to a neurosurgery clinic for further treatment. On the tenth post-operation day, she died in intensive care unit due to respiratory failure. Histology revealed grade-4 astrocytoma.

CASE II

A 43-year-old right-handed male patient was seen in consultation to a university hospital emergency room after the first episode of generalized tonic-clonic seizure lasting for two minutes. Patient had been experiencing sudden spells of panic and anxiety, accompanied by hot flushes, palpitations, feeling of emptiness, anhedonia, impending doom, decrease in sleep and electricity feeling in his body for one year. These attacks lasted a few minutes and occurred several times a week. Additionally, he had further episodes of anxiety with hesitancy of speech and dream-like state lasting for a few seconds. He had been taking an antidepressant drug, escitalopram 10 mg/day for four months given by an outpatient psychiatrist in the the hospital. He described a prominent decrease in depressive symptoms and less anxiety.

In his past psychiatric history, he had experienced panic attacks after the earthquake in 1999. These panic attacks resolved within few months without treatment. He described his current panic attacks as being different in quality and severity than his previous panic attacks.

His past medical history was insignificant. Physical and neurological examination showed no abnormalities. Routine investigations including serum biochemistry and thyroid profile were within normal limits.

On further work-up, EEG revealed bilateral slowing in frontal and parietal lobes. Sleep deprived EEG showed spike and sharp waves in left fronto-temporal region. Subsequent MRI-scan showed a tumor in the left temporo-hippocampal region with perifocal edema ranging 15 mm x 20 mm in diameter (Figure 2). Oxcarbazapine 600 mg/day for prevention of further epileptic seizures and dexamethasone 4mg/day for brain edema and lansoprazol 30 mg/day for gastric protection were started. His antidepressant drug was discontinued due to its potential risk of lowering epileptic threshold. A neurosurgical intervention was done. Histology revealed grade I astrocytoma. After surgery, he had difficulty with short-term memory and concentration for six months probably due to a great size of debulking of the tumor.

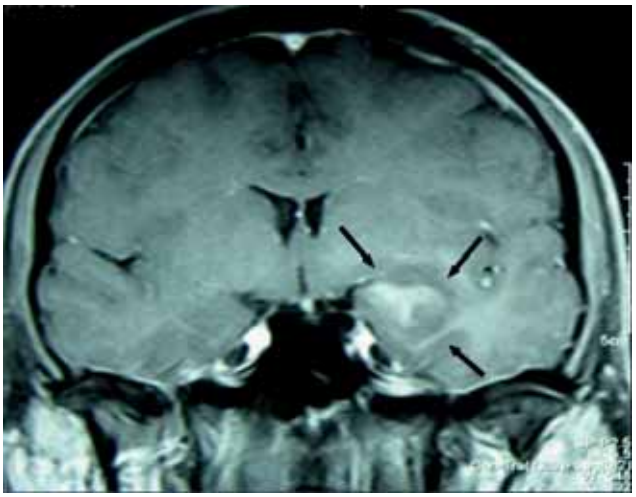

Figure-2: Coronal MRI of the case-II with left-sided temporal tumor

The same neuropsychological batteries mentioned above were administered to the patient after the surgery. He was oriented. He performed well in personal and present-day data. He had prominent difficulty with immediate and delayed recall in both verbal and visual domains. Results of clock-drawing, figure copy tests, and abstracting were abnormal.

In his family history, his father, 68 years old, had similar anxiety symptoms such as panic-like attacks with hot flushes, and palpitations. Considering his father's age and the risk of organic brain disorder, MRI scan was performed. Surprisingly, a temporal mass in a similar location was found. He then was sent to neurosurgery as well. Unfortunately we could not reach his pathology results.

DISCUSSION

Psychiatric manifestations of intracranial tumors can vary widely (9). Frontal and temporal lobes are the areas of the brain that are frequently associated with pscyhiatric disturbances.

Patients may have minimal or no neurological symptoms and signs as in the cases presented, and in such cases psychiatric symptoms may be the only clue (10). Despite the fact that psychiatric morbidity is relatively common in patients with certain brain tumours, it is infrequent for a psychiatrist to discover cerebral tumours in their patients since brain scans are not routinely ordered (3). A past history of psychiatric symptoms may complicate the emerging neurological picture and delay the diagnosis (11).

The frontal lobes can be broadly divided into two major areas, the motor-premotor area and the prefrontal cortices. Damage to the motor-premotor area results in speech and motor sequela. Damage to the prefrontal cortex is generally associated with the 'frontal lobe syndrome', which encompasses behavioral changes (12). Moreover, lesions in special regions of the frontal lobes present with distinctive clinical and behavioral symptoms or symptom clusters (13). Lesions of superior mesial frontal regions such as in our first case may cause loss of motivation, spontaneous behavior, emotional expression, initiation in addition to akinesia / bradykinesia and mutism. Lesions of the deep white matter pathways, may cause difficulty with empathy, marked alteration in emotional experience, irritability, personality change; dorsolateral prefrontal cortex lesions may present with cognitive rigidity, impaired working memory, poor planning, poor self-regulation, inattention, and poor spatial cognition (in right sided lesions) (13).

The first case presented with aspects of the frontal lobe syndrome, including apathy, depressed mood, mental slowness, and attention difficulties. In patients with late onset depression (aged 65 and over), the affective disturbance is more commonly associated with medical or neurologic disorders compared to early onset depression (9).

Intracranial tumors, particularly those involving the frontal lobes may be 'neurologically silent' (14). Ron et al. noted that such tumors seldom present as a primary mood disturbance without being associated with focal neurologic findings (1). This case illustrates that an intracranial tumor regardless of its size can present without significant neurologic deficits. In the first case, the patient must have been undergone neuroimaging primarily due to the late onset of psychiatric symptoms. Although having a short time of treatment, the first case seemed to have a poor response to the treatment and developing extrapyramidal side effects complicated the case. This may be a second cue for neuroimaging. The symptoms of flat affect and psychomotor slowing might have been considered as part of frontal lobe syndrome out of EPS.

Our second case was diagnosed with a temporal lobe tumor after presenting with panic attacks. Right temporal tumors may cause anxiety symptoms, panic attacks whereas left temporal tumors may present with depressive symptoms (15,16). It is interesting to note that anxiety symptoms were prominent in our case despite the fact that the tumor was located in the left side. Temporal lobe epilepsy (TLE) is frequently associated with emotional disturbances manifesting as ictal phenomena, directly related to the seizure discharge, or interictal behavior, occuring between overt seizures. (13). Patients with TLE have a high prevalence of interictal emotional problems, mostly anxiety and depression (17,18).

As we discuss in the second case, we could not conclude that panic-attacks existed as a pure psychiatric diagnosis or as a part of temporal lobe epilepsy. Although panic attacks caused by a temporal lobe tumor seem to be an extremely rare phenomenon, the possibility of this pathogenesis should be kept in mind, especially in patients with late-onset anxiety attacks (19). Because of the presence of the past psychiatric history of panic disorder, the work-up and diagnosis were delayed. But this time, he had some atypical symptoms like hesitancy of speech, feeling of impending doom, ictal fear, and dream-like state during the episodes of acute anxiety

which are the significance pointers towards an organic aetiology.

Although a recent review shows that there is no association between tumor locations or histological type and pychiatric symptoms (20), in our cases, psychiatric symptoms were correlated with their tumor location as we discussed above.

'Neurologically silent' tumors may cause diagnostic dilemmas in psychiatry. We aimed to show diagnostic difficulties that psychiatrists encounter diagnosing organic brain disorder. In these cases, some criteria may be the clues to bear in mind neuroimaging. We recommend neuroimaging should be considered in patients with presence of previous psychiatric symptoms with additional atypical symptoms, poor response to given psychiatric treatment, late-onset of psychiatric symptoms. And, a precise correlation of tumor size and behavioral change is often not possible.

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