Apathetic Affect as Early Sign of Frontal Lobe Tumor in Patient without Obvious Neurological Findings but with Remarkable Psychosocial Stressors

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Background: Whether a brain tumor can be efficiently detected by psychopathology is an important issue for psychiatrists. Case Report: We present was a 44-year-old male patient who showed apathetic affect after suffering from psychosocial stressors. He was diagnosed as a depressive disorder for a time due to not having obvious neurological signs at his first psychiatric clinic visit, but imaging studies finally revealed the finding of a huge glioblastoma multiforme. Conclusion: This case report shows that apathetic affect can be an early sign of a frontal lobe tumor, which may be found before the development of definite neurological signs. In patients with both remarkable psychosocial stressors and atypical clinical presentations, brain tumor is still a diagnosis of concern and should not be underestimated or overlooked.

Keywords: frontal lobe tumor, apathetic affect, psychosocial stressor, neuroimaging

Introduction

To differentiate brain tumors from the other psychiatric disorders is an important topic in psychiatric clinical practice. This presented case was a 44-year-old male patient with glioblastoma multiforme. He showed no obvious neurological symptoms at the beginning of diagnosis, and had similar clinical picture of depression to follow having psychosocial stressors. We aimed to discuss issue of early detection of the frontal lobe tumor in the psychiatric practice in this case report.

Case Report

Mr. A, a 44-year-old male patient, visited our psychiatric clinic due to apathetic affect lasting for two months.

The patient did not have any psychiatric history. He was an assistant in a company with a good job performance. His family had kept their
distance from him since he was found to have an extra-marital affair six months before the admission. Three months before the admission, he had aggravated conflicts with his wife. He started to come home late and stopped to financially support his family as he had done previously. His wife moved out of their home to leave him alone. Two months before admission, Mr. A quitted his job due to his having been late at work frequently. He had stayed at home all day since.

One month before admission, Mr. A was found to have an apathetic affect and unkempt appearance. His family considered that these changes ought to be due to the "depression," which was originated from the conflicts with his wife and his resignation from his job. His parents tried to support him, but his apathetic affect persisted. He started to have poor self-care ability, social withdrawal, and psychomotor retardation in the following days. He was suspected to have a depressive disorder at a psychiatric clinic. He started to receive sertraline and lorazepam. But he did not respond after having received the above management for weeks. Thus, he visited our clinic. His family still considered that Mr. A had a depression. The patient was admitted due to the atypical presentation of a mood disorder for differential diagnosis.

The findings of the mental status examinations revealed apathetic affect, inappropriate smiling, poor eye contact, psychomotor retardation, and stereotyped behaviors (with blinking and shaking hands). He had occasional irrelevant speech, with low spontaneous verbal output. He did not have definable delusion, hallucinatory behavior, negative thoughts, or suicidal ideation. He could not state his major concern. In cognitive tests, he did poorly in abstract thinking and a series of substraction of seven tests, but he had intact orientation, focusing ability and recent memory. A neurological examination showed no specific finding in cranial nerve, sensory, motor, or coordinative function. He had negative frontal releasing signs. The test results of complete blood cell counts, profiles of biochemistry, endocrine, infection and autoimmunity, were all within the normal limits. We discontinued all medications to observe the psychopathology. In the following days, he could sleep and eat as usual and reported no subjective dysphoric mood.

Yet, the patient developed urinary incontinence two days later. We hence arranged for a study of brain magnetic resonance imaging, and the result showed a huge brain tumor (9 × 8 × 5.5 cm) at the corpus callosum with an extension to hypothalamus (Figure 1). The result of electroencephalography (EEG) also showed diffused cortical dysfunction. The final diagnosis was glioblastoma multiforme. Apathetic affect should be

Figure 1. Glioblastoma multiforme. The huge glioblastoma multiforme with the size measuring at 9 × 8 × 5.5 cm was found to occupy frontal lobe and corpus callosum. Several satellite tumors at the right frontal lobe were also shown.
attributed to frontal lobe syndrome, the abulic type, which can be explained by the destruction of dorsal lateral prefrontal cortex and subcortical area.

Although his tumor was removed smoothly, Mr. A died one month after operation due to the complications of meningitis and increased intracranial pressure.

Discussion

About 50%-94% of patients with brain tumors show psychiatric symptoms, which are the first presentations in 18% of them [1]. Retrospective studies revealed that the frequency of brain tumors in patients in psychiatric wards is 1.5%-4% [2, 3], but that only 0.2%-3% of them are diagnosed when the patients were alive [4, 5]. The data imply that the early diagnosis of brain tumors is an uneasy task in the psychiatric practice. To detect brain tumors without obvious neurological features is especially challenging.

Being “neurologically silent” usually means not finding any neurological symptoms or signs, but we think that this term is somewhat unclear. When a patient with brain tumor does not receive an adequate management, the possibility of developing neurological symptoms is increased after the tumor grows larger. According to this unavoidable course of disease, being neurologically silent should be interpreted as a transient state. We consider that an appropriate definition of being neurologically silent should be modified as “a state that basic neurological examinations, such as motor, sensory, cranial nerve, coordination, autonomic function tests, and fundamental neuropsychological screening, is negative in findings.” According to this definition, Mr. A might be in neurologically silent state for a long period before developing apathetic affect. Tracing back the history of Mr. A, we think that apathetic affect should be viewed as a positive neuropsychological sign, but it can be also found in some psychiatric disorders and is not a specific sign with localizing value. When a solid sign such as the incontinence, was seen, most clinicians would think of an organic lesion of the brain. But to patients with neurologically silent tumors, waiting and observing the development of neurological signs may miss the critical time of therapeutic intervention. To detect a brain tumor before developing solid signs is a more meaningful issue in improving the prognosis.

Can psychiatrists detect brain tumors only by psychopathological features? Compared with other organic diseases involving the central nervous system, brain tumors lack specific psychiatric findings. Tumor location is usually used to judge symptoms in patients with brain tumors. The most frequent brain regions showing psychiatric symptoms are the frontal lobe, temporal lobe, diencephalon, and pituitary. But common psychiatric symptoms exist in almost each region in the brain [1]. A study of analyzing dozens of case reports shows that depression, mania, anxiety, personality change, and memory impairment are distributed diversely [6]. To predict the exact location or the existence of a tumor according to those symptoms is almost impossible.

Although common psychiatric symptoms have limited value in detecting tumors, brain tumor patients with psychiatric presentations often show atypical features to general psychotic and nonpsychotic disorders, such as the onset at an unusual age, poor response to standard management, and lacking of psychosocial factors. In our patient, apathetic affect and the extremely poor response to medication treatment would have been clues of organic lesion, and were possibly related to the frontal lobe destruction. Those clinical features indicate that the further diagnostic examinations, such as neuropsychological test, EEG, or neuro-
imaging, are necessary. Among those diagnostic
tools, the image study, especially brain magnetic
resonant imaging, is considered as a gold standard
to diagnose brain tumor. Negative findings from
neuropsychological test and EEG cannot entirely
exclude the possibility of the brain tumor [1].
Positive findings of these tests can just increase
the likelihood of having organic lesions, and the
final diagnosis of the brain tumor still depends on
the results of the neuroimaging examinations. We
consider that the findings of neurological exami-
nation, neuropsychological test, EEG can help for
differential diagnosis of some space-occupying
lesion, but neuroimaging study should be viewed
as a major tool when the diagnosis of brain tumor
cannot be excluded.

Some other factors interfere in our sensitivity
to diagnose a brain tumor. In our patient, we think
that the presences of his psychosocial events also
affected psychiatrists' decision-making not to pur-
sue the needed image studies. Medical care-givers
usually examine that if psychopathology of a case
can be explained from the interaction of external
stress and one's psychological response. Some pa-
tients with an atypical course are treated as pure
psychiatric disorders because they can be misled
if they are psychosocially formulated. But studies
reveal that stressful events involve with only lim-
ited specificity to mood disorders [7]. This case
report can remind us of this pitfall. Once we em-
phasize on the stressor and the following "break-
down," depressive or adjustment disorder will be-
come the major consideration. Patient's apathetic
affect had persisted several weeks before hospital-
ization, but neuroimaging study was not done in
the beginning of the clinical course due to the rea-
sonable but mislead psychosocial formulation.
Furthermore, Mr. A's family highly believed that
his change was resulted from the psychosocial
stressors. Such judgment is possibly related to the

custom and culture in Taiwan. Patient's psychopa-
thology is not the only one element for the psychi-
atrists to make clinical decisions.

This case report reveals that a huge frontal
tumor can still disclose no obvious neurological
findings and mainly presents with apathetic affect.
Non-biological factors, including the explainable
psychosocial formulation and family's attitude,
can influence psychiatrists' decision-making for
the arrangement of image studies. Psychosocial
factors are important for psychiatrists to diagnose
a patient, but they should be careful if he/she has
an atypical clinical presentation. We hope that our
experience in this case report can improve clini-
cians' sensitivity for the early detection of frontal
lobe tumors.

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