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Letter to the Editor

DEPRESSION AS THE FIRST SYMPTOM OF FRONTAL LOBE GRADE 2 MALIGNANT GLIOMA

Dear Editor,

Next to focal neurological symptoms, epileptic seizures and head aches, brain tumors can less frequently bring about cognitive changes, slowed speech, difficulty sustaining mental functioning and psychiatric symptoms of personality changes and. loss of interest in daily activities, these symptoms may be evaluated as anxiety or depression. Depression is known to be a complication of brain tumours and may sometimes be seen after the presentation of neurological symptoms linked to brain tumours, and sometimes after tumor treatment (Oğuz et al. 2005, Litofsky et al. 2004, Moise and Madhusoodanan 2006, Oreskovic M et al. 2007, Rooney A et al. 2010).

The dorsolateral prefrontal, orbitofrontal and medial frontal circuits constitute the three subcortical neuronal circuits in the frontal cortex. The dorsolateral prefrontal circuit is associated with planning and operational functions and lesions on it may give rise to apathy, abulia, perseveration, personality changes and planning disorder. Lesions involving the orbitofrontal circuit, which is associated with response suppression and disinhibition, may involve emotional lability and memory problems. Whereas lesions affecting the right orbitofrontal circuit give rise to elevated mood, lesions on the left orbitofrontal circuit lead to depressed mood. In cases with medial frontal circuit involvement, akinetic mutism may result from lesions in the superior medial region and anteroretrograde amnesia and confabulation are observed with lesions in the inferior medial region (Tosun et al. 2016, Chirchiglia 2018). A diagnosis of psychiatric disorder may be given during the first examination of patieants with primary brain tumours, especially if localized in the frontal lobe. Thorough history taking and physical examination are necessary for early diagnosis.

The case reported here concerns a 29-year-old university graduate female patient, living with her partner and children, who consulted the clinic with complaints of tendency to frequent crying, anhedonia, having difficulty with speech fluency, forgetfulness and distractedness that had presented suddenly, 2 months previously, without any causative stressor. In her mental status examination, she appeared having normal self-care with appearance at her actual age. She was fully conscious and oriented, not willing to cooperate with the interview, had distinct difficulty in maintaining attention and with fluency of speech. Her mood was depressive. She described loss of appetite, fatigue and energy loss. Her difficulty in paying attention was pronounced. She did not have a history of psychotropic medication use or family history of psychiatric disease. She did not smoke or use alcohol or substance.

After evaluating the clinical interview, a preliminary diagnosis of major depressive disorder was considered on the basis of the DSM-5 criteria. Routine blood tests were requested. Given the continuation of her complaints, the difficulty with fluent speech and the increase in tendency to sleep at the first week follow up, cranial MRI was planned.

The MRI results showed on the right, in the frontal lobe a multilocular mass with precallosal extension, undiscernable margins with the right lateral aspect of the corpus callosum genu and dispersed cystic-necrotic areas with T2 signal series. The dimensions of the mass were nearly 5 x 3 cm causing a 1-cm right-to-left shift of the midline (Figure 1)

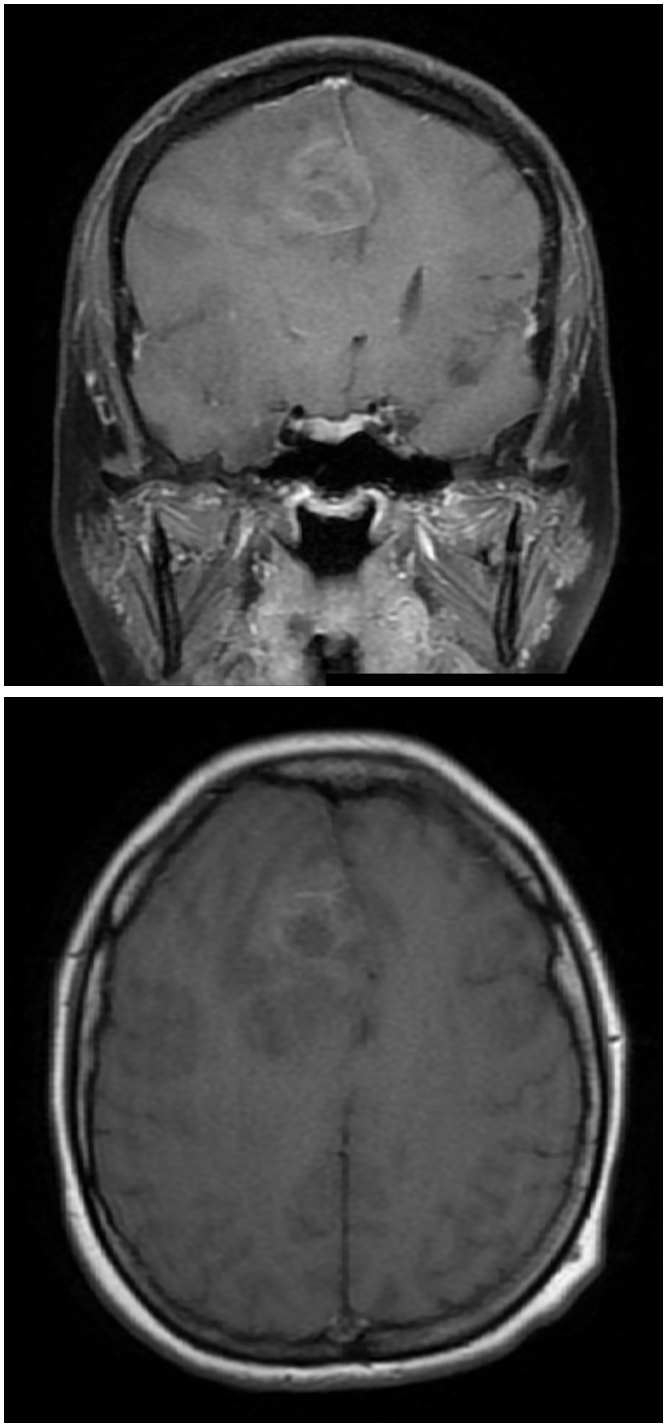

Figure 1- Cranial MRI of the patient

The patient was referred for surgery with the preliminary diagnosis of high-grade glial tumour. Pathology results identified a grade 2 glioma. It was learned that radiotherapy sessions were begun after surgery. The patient did not have any symptoms of psychopathology during the 2 monthly psychiatric interviews made after surgery.

Brain tumours generally indicate their presence with headache, seizures and other neurological symptoms and very rarely with depression as seen in the case of our patient. It should be kept in mind that atypical psychiatric symptoms may have an underlying organic lesion and subtle neurological symptoms should be investigated in detail.

A recent meta-analysis on 37 observational studies determined a 21.7% prevalence of depression in a total of 4518 patients with intracranial tumours. Comorbidity of depression with brain tumor was demonstrated to worsen the quality of life, increase suicidal risk and lower the chance of survival (Huang et al. 2017).

The possibility of psychiatric symptoms being the clinical clues for brain cancer was noted and the necessity of neuroimaging tests in cases of recent-onset psychosis or mood disorder symptoms, atypical personality changes and anorexia without body dysmorphic disorder was emphasized (Madhusoodanan et al. 2015).

Loss of interest, tendency to frequent weeping, introversion and anhedonia were the sole complaints in the case discussed here. The increase in psychomotor retardation and slowing down of movements at the very first weekly control follow up necessitated neuroimaging.

Despite the reports in the literature on the frequent association of unpreventable excessive behavior, disinhibition and irritability with right frontal injury and lesions (Okumuş and Hocaoğlu 2018), depression was the dominant symptom in the case presented here. There are differences between primary major depression and depression presenting with underlying somatic diseases which is known to occur at later ages (Rouchell et al. 2002). However, our patient was aged 29 years.

Also, cases of depression due to somatic disease are less associated with family history of depression and suicidal ideation and attempts, while cognitive symptoms come to the foreground during mental status examination. (Sertöz and Mete 2004, Rouchell et al. 2002). Our patient did not have suicidal ideation or attempts, or a family history of depression.

In apathy, which may be explained as emotional blunting, indifference or detachment from the external world, targeted behavior is also reduced next to the lack of emotional expression. The individual discussed here was learned not to sit at the table or change the television channel unless reminded to do so. When the reason was asked, she could not think of one. The reduction in emotional expression accompanies reduced insight, abulia and lack of empathy (Sözeri Varma et al. 2019). In depression, apathy is defined as 'sorrowless depression'. Our patient cried but had very blunted mimics and gestures. She explained that she could not help weeping even at times when she did not feel internally distressed.

The seriousness of apathy, as a symptom difficult to differentiate from depression, is still not understood. Neuroimaging

studies indicate apathy to be a reflect of impaired frontal-subcortical circuits and the functional disorder of the connections between the ventromedial prefrontal cortex and the basal ganglia (Chase 2011). Comparison of 45 individuals with depression due to aging and 43 healthy individuals showed apathy to be associated with fronto-limbic gray and white matter abnormalities which continued after antidepressant treatment. The structural anomalies of the posterior subgenual cingulate gyrus and the uncinate fasciculus were discussed (Yuen 2014).

The case discussed here is presented to emphasize the importance of brain imaging methods and detailed investigation of atypical symptoms for diagnostic approaches to psychiatric disorders. Especially, complaints at young age of depression with psychomotor retardation, reduced fluency of speech and sudden onset withdrawal without stressors should be a warning of secondary depression. Yours sincerely...

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