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Title: Neuropsychiatric aspects of frontal lobe meningioma

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Brain tumours are known to typically present with neurological signs. Rarely, psychiatric symptoms can be the only manifestation of a brain tumour (Madhusoodanan et al., 2015). Though it is not uncommon for patients to present with psychiatric symptoms as the first clinical manifestation of a brain tumour, they are often non-specific and do not assist in localising the lesion. With the limited available research, it is found that neuropsychiatric disturbances are more frequently associated with frontal and temporolimbic lesions (Filley et al., 1995). We present a case of a woman with frontal lobe meningioma who presented with a neuropsychiatric syndrome.

Ms S is a 50 years old woman with chronic schizophrenia that was stable for several years on a combination of 4mg of Risperidone and 50mg of Quetiapine. In early April, she presented with abrupt onset of fever, tremors, generalised weakness, lethargy, confusion, vomiting and loose bowels. On examination, she was noted to have a body temperature of 37.8°C with borderline tachycardia, bradykinesia, cogwheel rigidity and increased deep tendon reflexes. She did not have diaphoresis or autonomic instability. Laboratory tests showed elevated Creatine Kinase (CK) of 1800 U/L and neutrophilia. With clinical suspicion for NMS, her antipsychotic medications were ceased leading to a decrease in her CK to 60. She was discharged after being commenced on Olanzapine 2.5 mg daily, with positive effect for her psychotic symptoms.

Nine days following discharge Ms S presented again with some symptoms of NMS such as worsening tremors, two episodes of fever, rigidity, bradykinesia and was disoriented to time. Her CK and white cell count, however, were within normal levels. She also had catatonic features such as increasingly withdrawn behaviour, mutism and negativism. On hospital presentation, she was afebrile and septic screen was negative, and she was admitted to the psychiatric unit for further investigation. Whilst assessment by the emergency physician suggested that the etiology of her symptoms were related to psychotropic drugs, the psychiatrist opined that it was more likely to be delirium and also considered a differential diagnosis of organic catatonia. CT head was done following the recommendation of the psychiatrist and it showed left frontal lobe meningioma with 12cm midline shift with surrounding oedema. Ms S then was referred to the neurosurgery department and underwent surgical resection of the meningioma, which was successful.

Ms S was a patient with a stable psychiatric illness, who presented with overlapping features of NMS and catatonia but no overt psychotic symptoms. Her neuropsychiatric symptoms were likely to be the pressure effect of a left frontal meningioma. The nature of her presentation made the process of diagnosis challenging, especially with the initial absence of neuroimaging, which resulted in a delay in diagnosis and appropriate treatment.

Frontal lobe tumours have higher chances of producing mental status and personality changes with left sided lesions being more associated with inhibition of motor activity, impairment in motor and initiative aspect of speech, diminished generalization ability and general inertia of mental processes as seen in Ms S (Belyi, 1987). Given the absence of frank neurological symptoms to help localise the lesion, a high degree of clinical suspicion is usually required for early diagnosis. In patients suffering from schizophrenia, these symptoms can be explained by the illness itself and the side effects of the medications, thereby increasing the chances of missing the organic pathology due to diagnostic overshadowing of the primary psychiatric illness.

Neuroimaging should be considered in patients with atypical psychiatric symptoms, new-onset psychosis, recurrence of previously well-controlled psychiatric symptoms, and if they become refractory to psychiatric treatment (Madhusoodanan et al., 2015). Clinical suspicion must be raised when these symptoms are vague, rare, non-specific, with no clear cause or trigger and are associated with several causative etiologies.

Despite the many studies that have been done to correlate clinical presentation to the location of brain lesions, symptoms are still extremely unreliable diagnostic tools, and neuroimaging should be done when there is high suspicion index for organic pathology.

Conflict of interest

The authors declare that there is no conflict of interest. The authors have not received any funding for this manuscript. No part of the manuscript has been published elsewhere.

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