Large falcine meningioma presented as treatment-resistant depression: A case report

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SUMMARY

Large intracranial tumour may present only with psychiatric symptoms without any neurological deficits. Delay in surgical treatment may significantly affect the quality of life in these patients. We report a case of a young engineering student who was diagnosed as treatment-resistant depression without initial neuroimaging study. Further neuroimaging studies revealed he has a large falcine meningioma. His psychiatric symptoms resolved following surgical resection of the tumour. We emphasized the importance of initial neuroimaging study in young patients presenting with psychiatric symptoms.

INTRODUCTION

Intracranial tumours commonly present with neurological signs and symptoms related to mass effect. However, some patients may present with psychiatric symptoms only especially when a slow growing tumour is located in the frontal lobe. The incidence of psychiatric symptoms in patients with brain tumours has been reported as high as 50 to 78%.[1,2] Here we report a case of a young patient with falcine meningioma who was diagnosed and treated as depression for 10 years without initial neuroimaging study and nearly undergo for electroconvulsive therapy.

CASE REPORT

The patient is a 33-year-old man who presented with progressive behavioural changes, poor memory and social isolation over the past ten years. He had twice dropped out from engineering course in two different colleges due to his illness and was treated for depression at private clinic for nine years. His symptoms worsened since the last one year, where he spent most of his time on the bed with poor oral intake and poor self-care. He was then taken to a private hospital and treated as a case of major depressive disorder. He was prescribed with Olanzapine and Desvenlafaxine. No initial neuroimaging study was performed during the years. There was no history of chronic headache or any symptoms that was suggestive of raised intracranial pressure or motor-sensory deficits all the while. Subsequently, he was referred to the Psychiatry Team for electroconvulsive therapy in view of failed medical therapy. Computed tomography (CT) scan of the brain was arranged and scan revealed a large falcine meningioma. Following that he was referred to the Neurosurgical Team for further management.

On examination, he was conscious but blunted looking and appeared lethargic. He was slow in response including his speech but was still able to follow simple two steps commands. Pupils were 3mm bilaterally and reactive to light. Fundoscopy examination revealed bilateral papilledema. There was no cranial nerve dysfunction. His lower limbs power was 4/5, hypertonia and hypereflexia. Assessment of higher mental functions was not performed due to general slowness of his response.

Magnetic resonance imaging (MRI) of the brain demonstrated a well circumscribed falcine meningioma measuring about 7cm X 7.5cm X 7.5cm. There was no involvement of the superior sagittal sinus (Figure 1).

Patient was started on steroid therapy and antiepileptic prior to surgical intervention. He underwent bifrontal craniotomy and excision of tumour (Simpson 2). Intraoperatively, the meningioma was firm with multiple arterial feeders from the falx. Tumour was devascularised medially from the falx, centrally debulked and excised. Histopathological finding was consistent with Meningioma (WHO grade 1).

Postoperatively he had transient worsening of frontal lobe syndrome as he uttered rude words and disinhibition. However, these symptoms subsided after three days. The subsequent recovery period was uneventful, and he started to mobilise in the ward. At post-operative one week, he appeared cheerful with normal speech, and communicated well with his mother and the hospital staff. The power in his lower limbs also improved to 5/5 one week after the surgery. The anti-depressant and anti-psychotic medications were then ceased at post-operative two weeks. Neurology examination at postoperative three-month revealed his memory was improving with no other neurological deficits. There was no longer appearance of any of his pre-operative neuropsychiatric symptoms and was able to use telecommunication device. At one year follow up, his higher mental function was intact and started farming works for living. Figure 2 showed the one-year postoperative MRI of the brain with no recurrence.

DISCUSSION

Meningioma is a slow growing tumour and it can grow to considerable size before symptoms become apparent.[3] Commonly the manifesting symptoms are due to the

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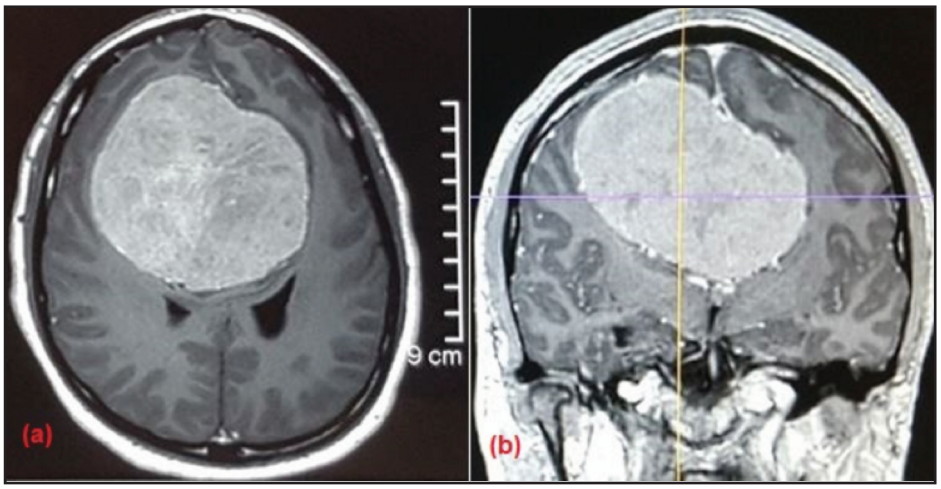

Fig. 1: Preoperative MRI showed a large homogenously contrast enhanced falcine meningioma measured about 7 cm x 7.5 cm x 7.5 cm. (a) axial view; (b) coronal view.

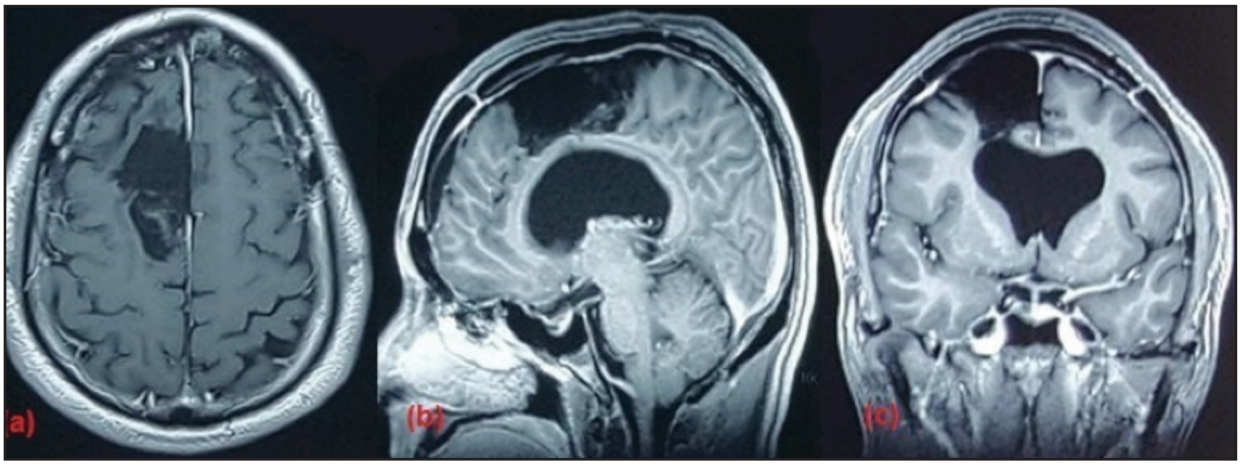

Fig. 1: Postoperative MRI at one year follow-up showed no recurrence of tumour. (a) axial view; (b) sagittal view; (c) coronal view.

compression of the adjacent structures, direct invasion, or reactive changes in adjacent brain tissue, and obstruction of cerebrospinal fluid pathways, cortical veins, or major venous sinuses. In addition, the presentation of meningioma depends on the location of occurrence also in the brain. Symptoms mimicking psychiatric disorder might be the only manifestation if the meningioma is located in the frontal lobe as in our case. Study revealed 21% of meningioma patients in the 4th decade of life presented with psychiatric presentations with no neurological symptoms.[1]

Neuroimaging study is still not a routine investigation for psychiatric patients in general, despite the wide availability and accessibility of imaging facilities nowadays. Also, there is no consensus yet in the use of neuroimaging as a routine study in patients with newly diagnosed psychiatric disorder.

Few authors recommend that psychiatrists should be aware of focal neurological signs caused by left temporal lobe in schizophrenic patients, and neuroimaging should be performed to psychiatric patients with atypical presentation, such as auditoric hallucinations, visual hallucinations or peduncular hallucinations. Neuroimaging is also suggested for established psychiatric patients with new psychiatric symptoms or neurobehavioral changes.[2]

On the other hand, some authors do not recommend the use of neuroimaging in patients who present with typical psychosis or first episode of psychosis.[4] The NICE guideline[5] does not recommend the use of structural neuroimaging techniques (either MRI or CT scanning) as a routine part of the initial investigations for the management of first-episode psychosis in view of the limited evidence base to support routine scanning.

In our case, this young patient had been diagnosed as having depression mainly based on clinical presentation and was started on anti-depressant. No neuroimaging was done when the first diagnosis was made, or throughout the course of depression treatment for 10 years. And he was referred for electroconvulsive therapy for treatment-resistant depression. It is important to emphasize that accuracy of the first diagnosis is crucial for the quality of life of the patients. Ignoring the possibility of having intracranial lesion had

caused the tumour to progress and at the same time it was thought that his psychiatric disorder was not responsive to medical therapy. If the neuroimaging has been performed earlier for this patient, he would not have had the need to undergo unnecessary treatment, letting the primary disease to progress further and losing his opportunity to become an engineer.

CONCLUSION

We suggest that neuroimaging, at least a plain CT scan of the brain, to be done in young patients presenting with psychiatric symptoms, specifically mood disorder or frontal lobe syndromes before any diagnosis of psychiatric disorder is made in view of the possible negative impact to the quality of life of the patient

REFERENCES

1. Moise D, Madhusoodanan S. Psychiatric symptoms associated with brain tumours: a clinical enigma. CNS Spectr 2006; 11(1): 28-31.
2. Madhusoodanan S, Danan D, Moise D. Psychiatric manifestation of brain tumours: diagnostic implications. Expert Rev Neurother 2007; 7(4): 343-9.
3. Bondy M, Ligon BL. Epidemiology and etiology of intracranial meningiomas: a review. J Neurooncol 1996; 29(3): 197-205.
4. Khandanpour N, Hoggard N, Connolly DJ. The role of MRI and CT of the brain in first episodes of psychosis. Clin Radiol 2013; 68(3): 245-50.
5. National Institute for Health and Clinical Excellence. NICE technology appraisal guidance No 136. Structural neuroimaging in first-episode psychosis. [cited June 2018]. Available at http://guidance.nice.org.uk/TA136/Guidance/ doc/English.