PSYCHIATRIC MANIFESTATIONS DUE TO A FRONTAL MENINGIOMA: A CASE REPORT

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ABSTRACT

Introduction: Meningiomas are the most frequent primary tumours of the central nervous system. Although benign brain tumours generally cause focal neurological signs, meningiomas of the frontal lobes can grow for many years causing only psychiatric symptoms, such as gradual personality and neurocognitive changes. **Case presentation:** We describe the case of a woman who was admitted to our department due to visual hallucinations and disorganised behaviour. During the last 4-5 years before her admission, the patient had been manifesting gradual personality changes and neurocognitive defects that had deteriorated significantly the last few months before her hospitalisation. She refused to see a doctor and her situation kept deteriorating until her admission. The neuroradiologic examinations revealed a large frontal meningioma to which the aforementioned manifestations were attributed. Later, she was operated and her symptoms subsided completely. **Conclusion:** High clinical suspicion is warranted in patients over age 50 with personality changes, atypical manifestations of a psychiatric disorder, or those who do not respond to the usual treatment, especially if they have no known prior mental illness, in order to exclude any secondary, treatable condition.]

Keywords: frontal lobe, meningioma, neuroimaging, psychotic disorders

ΨΥΧΙΑΤΡΙΚΕΣ ΕΚΔΗΛΩΣΕΙΣ ΟΦΕΙΛΟΜΕΝΕΣ ΣΕ ΜΗΝΙΓΓΙΩΜΑ ΜΕΤΩΠΙΑΙΟΥ ΛΟΒΟΥ: ΑΝΑΦΟΡΑ ΠΕΡΙΠΤΩΣΗΣ

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ΠΕΡΙΛΗΨΗ

Εισαγωγή: Τα μηνιγγιώματα είναι οι συχνότεροι πρωτοπαθείς όγκοι του κεντρικού νευρικού συστήματος. Παρότι οι καλοήθεις όγκοι του εγκεφάλου γενικά προκαλούν εστιακά νευρολογικά σημεία, τα μηνιγγιώματα των μετωπιαίων λοβών μπορούν να μεγαλώνουν για πολλά χρόνια προκαλώντας μόνο ψυχιατρικά συμπτώματα, όπως σταδιακές μεταβολές της προσωπικότητας και των νευρογνωσιακών λειτουργιών. **Παρουσίαση περίπτωσης:** Περιγράφουμε την περίπτωση γυναίκας, ηλικίας 69 ετών, που εισήχθη στην κλινική μας λόγω οπτικών ψευδαισθήσεων και αποδιοργανωμένης συμπεριφοράς. Κατά τα τελευταία 4-5 έτη πριν από την εισαγωγή της, η ασθενής εμφάνιζε σταδιακές μεταβολές της προσωπικότητας και νευρογνωσιακά ελλείμματα που είχαν επιδεινωθεί σημαντικά τους τελευταίους λίγους μήνες προ της νοσηλείας της. Αρνούνταν να εξεταστεί από γιατρό και η κατάστασή της συνέχιζε να επιδεινώνεται μέχρι την εισαγωγή της. Οι νευροαπεικονιστικές εξετάσεις ανέδειξαν ένα ευμέγεθες μετωπιαίο μηνιγγίωμα στο οποίο αποδόθηκαν οι προαναφερθείσες εκδηλώσεις. Αργότερα χειρουργήθηκε και τα συμπτώματά της υποχώρησαν πλήρως. **Συμπέρασμα:** Απαιτείται υψηλή κλινική υποψία σε ασθενείς άνω των 50 ετών που παρουσιάζουν μεταβολές στην προσωπικότητα, άτυπες εκδηλώσεις ψυχικής διαταραχής ή δεν ανταποκρίνονται στη συνήθη θεραπεία, ιδιαίτερα εάν δεν έχουν γνωστό ψυχιατρικό ιστορικό, ώστε να αποκλειστεί οποιαδήποτε δευτεροπαθής κατάσταση που θα μπορούσε να αντιμετωπιστεί.

Λέξεις-κλειδιά: μετωπιαίος λοβός, μηνιγγίωμα, νευροαπεικόνιση, ψυχωτικές διαταραχές

INTRODUCTION

Meningiomas are the most frequent primary tumours of the central nervous system (CNS).[1] Benign brain tumours generally cause focal neurological signs,[2] however, tumours, such as meningiomas, which exert pressure on the frontal lobes, may cause no symptoms other than gradual personality and neurocognitive changes, until they enlarge.[3] Psychiatric symptoms may often be the sole manifestation of a meningioma. This is why high clinical suspicion is warranted in patients with personality change, atypical manifestations of a psychiatric disorder, or patients who do not respond to the usual treatment.[4]

We describe the case of a woman who was admitted to our clinic due to visual hallucinations and disorganised behaviour. For the last 4-5 years before her admission, the patient had been manifesting gradual personality changes and cognitive defects that had deteriorated significantly during the last few months. The neuroradiologic examinations revealed a large frontal meningioma to which the aforementioned manifestations were attributed.

CASE REPORT

The patient was a married woman, aged 69, mother of two children. Her previous medical history was significant only for arterial hypertension and a past operation of hysterectomy. Her family reported no history of alcohol or drug abuse except for smoking. She was admitted to our clinic due to serious behavioural disorganisation and visual hallucinations.

Per her family, the last two months before her admission, the patient had been withdrawn, with clinophilia, anorexia with weight loss, polydipsia with polyuria, and depressive mood. They also described visual hallucinations, logopenia, and behavioural disorganisation. According to the available information, the past 4-5 years were characterised by gradual behavioural changes with probable logopenia, mild memory disorders and gradually increasing withdrawal, until, during the last two months before the admission, the situation seemed to get out of control but the patient insisted on refusing to get a medical examination.

During the initial clinical examination, the patient was calm and co-operative, oriented to place and self, but mildly disoriented to time. Her cognitive functions were disturbed, as the crude clinical examination showed. However, her situation did not allow for a thorough neuropsychological evaluation. She denied any illusions or hallucinations but possible delusional ideas of reference were observed. Due to high blood glucose levels (>550 mg/dl) an endocrinological consultation was made and instructions were given. The ECG revealed chronic ischemic-like changes and 1st degree atrioventricular block. A fundoscopy did not reveal any pathological findings.

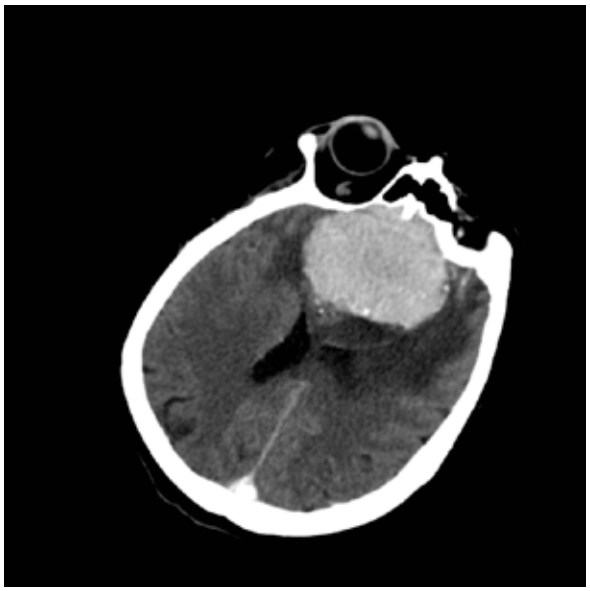

Figure 1. The brain MRI revealed a large, space-occupying lesion in the anterior cranial fossa and the midline, with its broad basis to the cribriform plate of the ethmoid bone and the area of the sphenoid bone, 4,2 X 4,7 X 5 cm, which exerted pressure to the adjacent frontal lobes (inferior surface) with concurrent oedema of their white matter. This lesion was of homogenous substance and enhancement, seemed to expand to the sella turcica and, possibly, to the left cavernous sinus. Dislocation of individual vascular branches of the anterior vascular system with broadened vascular parts in its periphery were also observed, findings consistent mainly with meningioma of the cribriform plate of the ethmoid bone (**Figure 2**).

Our main diagnostic thought was that of vascular dementia with behavioural disorders and concurrent probable psychotic symptoms. The differential diagnosis included other organic brain disorders (tumours, Parkinson disease) and a brain CT was requested. The patient was started on a low dose of antipsychotic medication (risperidone, 2 mg).

The brain CT was made on the 4th day of her hospitalisation and revealed a large space-occupying lesion in both frontal lobes with intense homogeneous enhancement and intense perifocal oedema, 6 x 5,2 x 5,7 cm, which was broad-based with the basis of the frontal bone (probable meningioma). The lesion seemed to invade the sella turcica, coming to connection with the hypophysis and the cavernous portion of internal carotid arteries, especially the left one, as well as the left temporal lobe. Additionally, intense pressing phenomena to the optic chiasm, the frontal horns of the lateral ventricles and the genu of corpus callosum were found (**Figure 1**). The antipsychotic drug was stopped, and a neurosurgical consultation was made with the instruction to begin administration of dexamethasone. The clinical picture

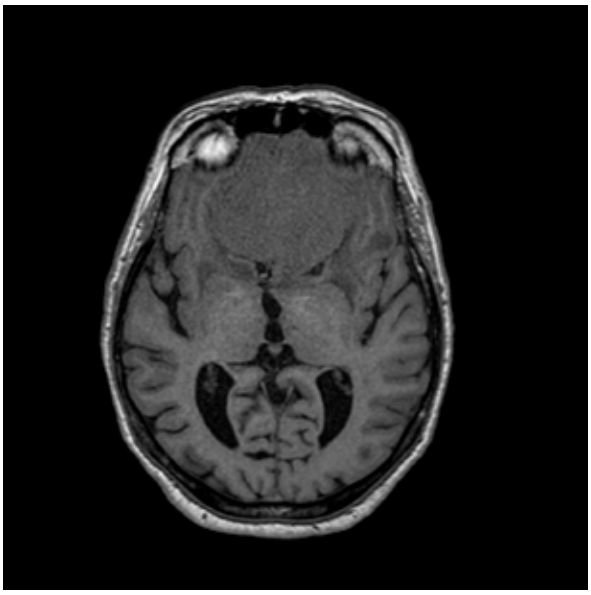

Figure 2. The EEG showed slightly anomalous diagram of alertness due to intermittent slow theta waves in the left posterior areas. The patient was submitted to thorough investigation and, three months later, the tumour was removed surgically. She did not receive any psychotropic medication and her symptoms fully subsided gradually.

of the patient, concerning the psychotic symptoms and the behavioural disorders, gradually improved.

DISCUSSION

Meningiomas are the most common primary tumours of the CNS. They are usually benign, slowly evolving neoplasms, believed to derive from the meningoepithelial cells. They are more common in women, and their incidence increases with age, the mean age of diagnosis being 66 years.[1]

Benign brain tumours, either primary or metastatic, usually cause focal neurological signs, such as hemiparesis, sensory defects, and aphasia.[2] However, frontal lobe tumours may be ***silent***: tumours, such as meningiomas, which exert pressure to the frontal lobes from outside, may cause no symptoms other than gradual personality and neurocognitive changes, until they enlarge. Patients with such tumours are frequently examined by psychiatrists first and the correct diagnosis is made only after the tumour has become large enough to cause expanding phenomena.[3]

Psychiatric signs and symptoms may depend on the localisation of the tumour and may include mood disorders, psychotic symptoms, memory problems, personality changes, anxiety symptoms, and anorexia. Psychiatric symptoms may frequently be the sole manifestation of a meningioma.[4]

Gupta and Kumar conducted a retrospective study of psychiatric morbidity in patients with benign brain tumours during a period of five years. Among the 79 patients they identified, 72 had meningiomas, 15 of which (mean age of 60.5 years) manifested only psychiatric symptoms. No relationship between brain lateralisation and psychopathology was found.[5] In another retrospective analysis of eight patients with psychiatric diagnoses, under psychiatric attendance, half were found to have a meningioma. The diagnosis of Alzheimer's dementia was made in two of them, that of depression and Parkinson disease to one each and one received the diagnosis of organic mood disorder.[6]

When a middle-aged person, with free psychiatric history, manifests gradually evolving psychiatric symptoms and does not respond adequately to the treatment or the symptoms do not match with those of a specific psychiatric diagnosis, the clinician should suspect a brain tumour, especially meningioma.[2] This is why a high index of clinical suspicion is warranted in patients who manifest personality changes, atypical characteristics of psychiatric disorders, or do not respond to the usual treatment.[4]

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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