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Case Report

A New Life Through Neurosurgical Intervention in Depression and Change of Personality

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Introduction

A new life through neurosurgical intervention in depression and change of personality a case report of a 62-year-old patient with sphenoid wing meningioma. We present the case of a 62-year-old female patient who was admitted with depressive symptoms, including lack of motivation, cognitive impairment, and occipital headaches. Due to accompanying gait instability and suspected neurological involvement, cranial MRI revealed a left-sided sphenoid wing meningioma with frontal and temporal lobe edema and ventricular compression left. Surgical resection of the tumor led to a complete remission of depressive symptoms. This case emphasizes the importance of considering organic causes in atypical or treatment-resistant depression, especially in older patients.

Keywords: Meningioma; Depression; Frontal Lobe Syndrome; MRI; Neurosurgery; Cognitive Decline.

Introduction

Psychiatric symptoms such as depression, change of personality may be manifestations of organic brain disorders. Structural abnormalities, especially in older individuals, should be considered as potential causes. Frontal lobe lesions are particularly relevant due to their frequent association with affective and cognitive changes. This case highlights the significance of interdisciplinary diagnostics and therapy planning.

Case Presentation

A 62-year-old woman presented with a two- to three-year history of gradually worsening depressive symptoms, including loss of drive, social withdrawal, and hopelessness. She had undergone psychotherapy and multiple antidepressant treatments without lasting benefit. She also reported emotional estrangement from her husband and an inability to make future plans. In the recent months, she developed gait unsteadiness, dizziness, and occipital headaches. She denied nausea or vomiting.

Patient History: The patient's husband reported progressive personality changes, including emotional blunting, cognitive slowing and increased insecurity. He also observed episodes of disorientation, mild word-finding difficulties and a general disinterest in previously meaningful activities.

Clinical Findings: Neurologically, the patient had a slightly positive Romberg sign with otherwise intact coordination. Pupillary reflexes were normal. Motor testing revealed no abnormalities. Montreal Cognitive Assessment (MoCA) scored 23/30, particularly indicating deficits in attention and executive functions. Due to persistent symptoms and subtle neurological signs, urgent cranial MRI was performed.

Diagnostic Assessment: MRI revealed a well-defined 3.5 cm contrast-enhancing lesion at the left sphenoid wing, surrounded by edema involving the left frontal lobe and temporal lobe compressing the left lateral ventricle. There were no signs of hydrocephalus

(Figures 1,2,3). The radiological findings were disproportionate to the mild neurological signs but explained the neuropsychiatric presentation. Differential diagnoses included meningioma (most likely), metastasis, or low-grade glioma (Figures 1, 2,3).

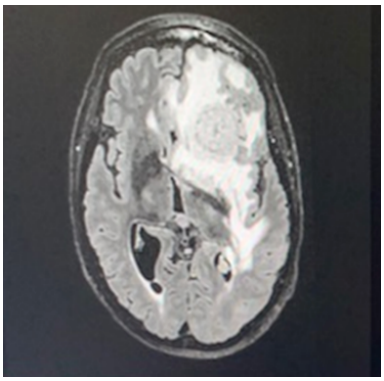

Figure 1: MRI, before surgery, sphenoid wing meningioma in axial FLAIR imagine without contrast. The midline is medially displaced and compress left lateral ventricle.

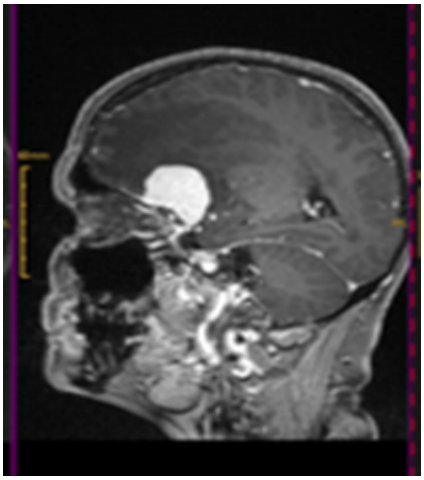

Figure 2: MRI, before surgery, a sphenoid wing meningioma in the sagittal plane T1-weighted imagine after contrast. Homogeneous contrast enhancement.

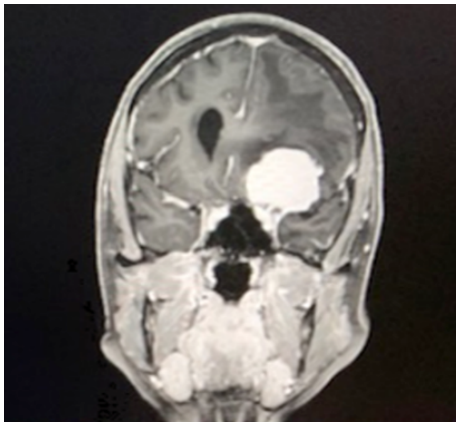

Figure 3: MRI, before surgery, a sphenoid wing meningioma in the coronar plane T1-weighted imagine after contrast administration. The midline medially displaced and compression of the left lateral ventricle.

Therapeutic Intervention: The patient was admitted to the neurosurgical unit and underwent osteoclastic trepanation and tumor resection after multidisciplinary consultation. The operation was uncomplicated (Figure 4,5). Histological analysis confirmed a secretory sphenoid wing meningioma, WHO Grade I (Figure 6,7). These tumors can release biologically active substances, which may contribute to neuropsychiatric symptoms. No additional radiotherapy or chemotherapy was required.

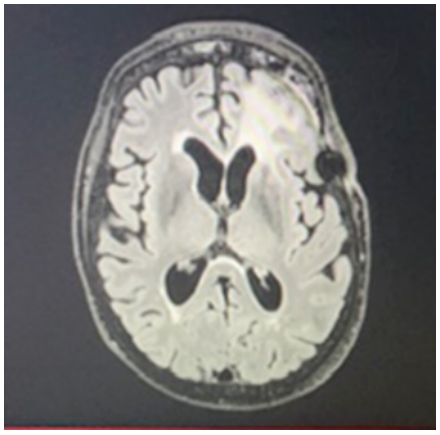

Figure 4: MRI, after surgery of sphenoid wing meningioma in the axial FLAIR- sequence. Residual edema frontal, nearly normal left lateral ventricle and normal midline.

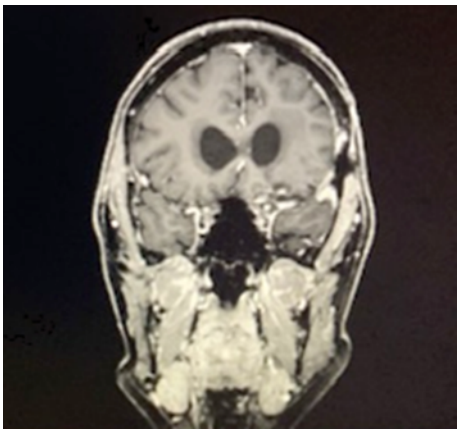

Figure 5: MRI, after surgery, of a sphenoid wing meningioma in the coronar plane T1-weighted imaging after contrast administration.

Follow-Up and Outcomes: The patient reported a dramatic psychological improvement shortly after surgery. Her depressive symptoms resolved completely, and she regained full physical function. At four-month follow-up, MRI showed no residual tumor or edema, and normal ventricular configuration. Neuropsychological evaluation confirmed recovery of executive functions and the patient resumed social and familial engagement with improved quality of life.

Imaging Considerations: Cranial MRI was the key diagnostic step in this case. The decision was based on subtle neurological symptoms and clinical intuition. Frontal meningiomas are often slow-growing and exert mass effects that impair higher cortical functions. Without imaging, these are often mistaken for primary psychiatric disorders.

Long-Term Follow-Up and Aftercare: Postoperative monitoring was coordinated across psychiatry, neurosurgery and primary care. Four months after resection MRI confirmed complete tumor removal and absence of recurrence. The patient remained symptom-free and regained full cognitive and functional capacity.

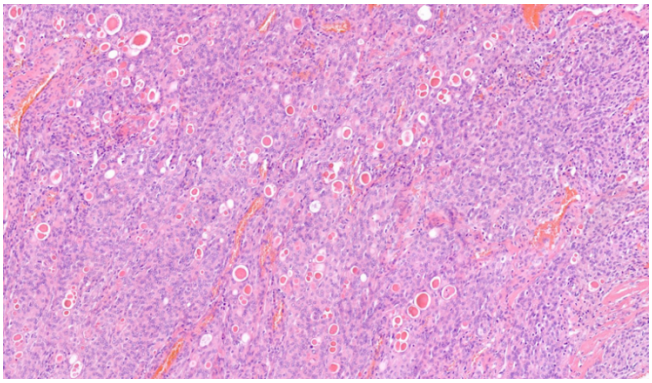

Figure 6: Histological examination of the Meningioma (10x): Histology showed an epitheloid tumor with syncytial growth pattern arranged in sheets

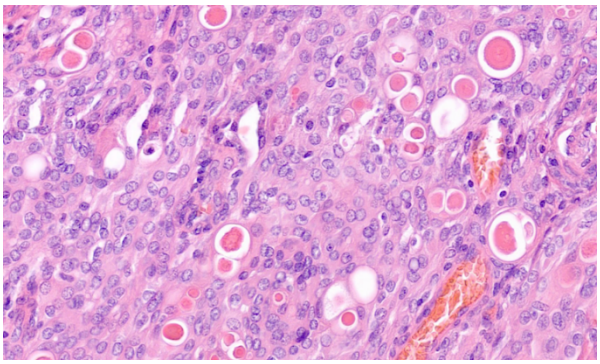

Figure 7: Histological examination of the Meningioma (40x): On higher magnification, tumor cells are monomorphous and feature occasional nuclear pseudoinclusions. Characteristic pink pseudo-psammoma bodies (eosinophilic secretions) are diagnostic of secretory meningioma.

Discussion

Frontal lobe tumors often present with psychiatric symptoms especially those involving executive dysfunction. Frontal meningiomas are commonly misdiagnosed as primary depression, particularly in the absence of overt neurological deficits. MRI is essential in evaluating new-onset or therapy-resistant depression in older patients, particularly when subtle cognitive or behavioural changes are present. This case demonstrates that a structural brain lesion was the underlying cause of depression and was reversible through surgery [1-13].

Relevance for Clinical Practice: This case underlies the importance of interdisciplinary diagnostics in general and psychiatric practice. Not all depression is psychogenic. Especially in older patients' structural causes must be ruled out. Neuroimaging plays an indispensable role in these settings, enabling timely and potentially curative treatment.

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Ethical Considerations: The patient has given her consent so that all images can be published anonymously.

Conflict of Interest: I disclose any potential conflicts of interest that may influence the results or interpretations of the manuscript.

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