

Convexity Meningioma Associated with Depression: A Case Report

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SUMMARY

Introduction Meningiomas are slow growing, extra-axial lesions, and can be neurologically silent for a long time and present only with depression.

Case Outline A 65-year-old woman developed major depression and was treated with antidepressants for two years. Depression failed to respond to drug treatment and there was no improvement. Two months before admission to hospital, due to the onset of epilepsy attack the patient underwent reinvestigation, and a large temporal convexity meningioma, which corresponded in position to the original electroencephalography focus, was diagnosed using the computer topography of the brain. The patient underwent osteoplastic craniotomy, and a left fronto-temporal convexity meningioma of 5 cm in diameter was completely removed with its attachment to the dura. Histological examination confirmed a fibroblastic meningioma.

Conclusion Total resection of convexity meningioma and decompression of the brain tissue in the region of limbic pathways that are involved, may contribute to a complete remission of depression symptoms. This case also illustrates the need for a prompt neuroimaging of the brain when patients present any atypical psychiatric symptoms, with late onset (>50 years old) of the first depressive episode or fast changes of the mental state.

Keywords: meningioma; depression; surgical treatment

INTRODUCTION

Brain tumors can be neurologically silent and may cause psychiatric symptoms like depression, anxiety, cognitive or personality changes or schizophrenia [1-7]. Most often, intracranial meningiomas are responsible. Amongst cerebral tumors detected in patients in psychiatric hospitals meningiomas are found twice as often as in the general population [8]. Meningiomas arise from the meningeothelial cells of the arachnoid layer and they are slow-growing lesions, often reaching an impressive size before presenting with clinical symptoms. They can be neurologically silent for a long time and present only with depression or mood changes [9]. History of symptoms for many years before diagnosis could not be unprecedented.

The aim of this case report is to describe a female patient who initially developed psychiatric diagnosis and was treated as depression for two years but she was eventually diagnosed to have a convexity meningioma.

CASE REPORT

A 65-year-old female was admitted due to depression and focal epilepsy at the Neurosurgery Department of the Clinical Hospital Center Zemun.

Two years ago she consulted a psychiatrist due to depressive thoughts. The patient had frequent depressed mood most of the day, insomnia, feelings of hopelessness, pessimism,

appetite loss, decreased energy, being slowed-down and with difficulty in concentration. On Hospital Anxiety and Depression scale (HADS) she had 26 points. There was no organic problem in her medical history, and family history of mental illness was not reported. She was medically treated, after being diagnosed as major depression, with sertraline and diazepam. After year and a half of the treatment with antidepressants there was no progress. A routine electroencephalogram (EEG) was done and it was normal. She was seen by the psychiatrist two months before hospitalization because the symptoms worsened, and she had focal epilepsy. Although an electroencephalogram showed a focal abnormality, worsening of her epilepsy led to reinvestigation and a large, intense, homogeneous contrast enhancement with well-defined mass (4.81×2.7 cm) in the left fronto-temporal lobe was diagnosed by computer-topography (CT) (Figure 1). Convexity meningioma was considered. The patient denied any kind of trauma to this region. Her routine hematological and biochemical parameters were normal. The patient underwent osteoplastic craniotomy and the 5 cm left fronto-temporal convexity meningioma was completely removed with its attachment to the dura (Simpson grade I) (Figure 2).

Histological examination revealed a benign fibroblastic meningioma with rare psammoma bodies.

In early post-op period the patient reported few headaches but did not report any episode of seizures. After operation she remained on car-

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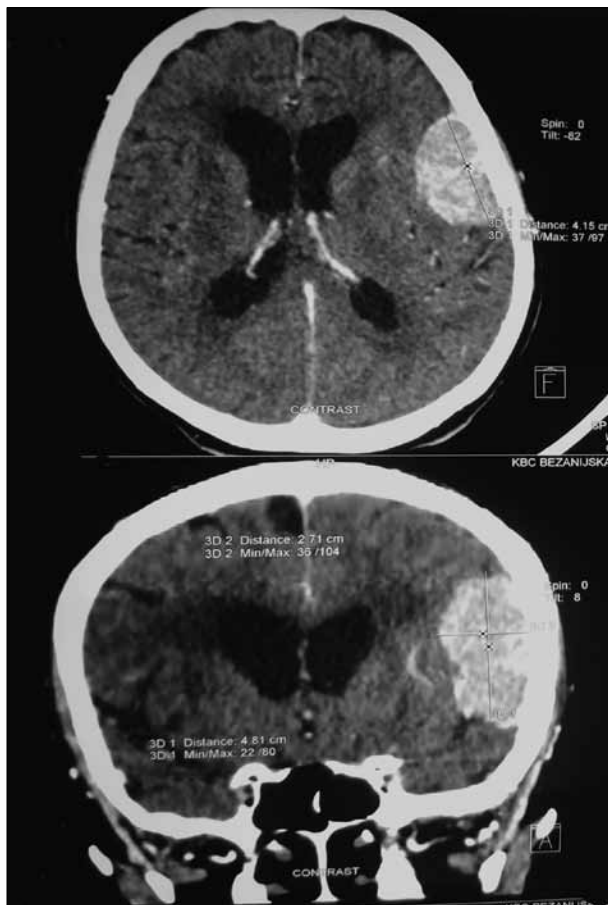


Figure 1. CT of the brain demonstrated a slightly homogeneous, hyperdense extra-axial mass, approximately 2.7×4.81 cm adjacent to the left temporal lobe

bamazepine. Her depression symptoms resolved and psychiatric examination showed remission of depression. The patient's medications were not restarted after surgery. Six months after psychiatric evaluation the HADS test showed 50% decrease from operation and the value was <7.

DISCUSSION

Meningiomas are slow-growing, extra-axial lesions that arise from the meningotheelial cells of the arachnoid. They may be neurologically silent and present only with psychiatric symptomatology [1-8]. The most common symptoms are depression, lack of motivation and memory deficits. Many meningiomas are found incidentally. There are presented cases of patients with the history of depression that were eventually diagnosed to have meningioma [9, 10]. Neurologically silent benign meningiomas presented only with depression mood symptoms are found in 21% [8].

In the majority of brain tumors, patients with psychiatric symptoms, frontal lobe tumors produce mental status and personality changes in 90% of cases [11, 12]. Recent studies have not found any connection among tumor location either peritumorous edema or depression symptoms [1, 2]. Our patient was treated under the diagnosis of major depression for two years but she was eventually diagnosed to have a temporal convexity meningioma after



Figure 2. Postoperative CT of the brain. No residual tumor was found

focal epilepsy. Once the local or generalized neurological symptoms become manifest, brain imaging must be performed immediately. This way may be too long for a patient with meningioma (or with other brain tumor), because early detection has a direct influence on treatment options, quality of life and for the outcome of surgery. There have been few research attempts to define clinical indications for neuroimaging of psychiatric patients [13].

Factors that should lead the clinician to suspect a "meningioma" cause of symptoms of depression include focal neurological symptoms, disorientation or epileptic symptomatology, and neuroimaging should be done urgently. Suspicion of brain tumor should be considered in patients with atypical psychiatric presentations, first depression episode, after 50 years of age or resistance to antidepressants [11, 12, 14, 15].

Our 65-year-old female patient was treated in a psychiatric service for two years before the convexity meningioma was diagnosed. She had no family history of psychiatric diseases. In our case, it is unclear whether her symptoms of depression were caused by a large convexity meningioma or its development at earlier stage. Poor response to treatment and waxing of neurological symptoms led to neuroimaging (CT) of the brain and detecting a large convexity meningioma. A magnetic resonance imaging/CT scan with contrast could detect the tumor mass in earlier phase.

This case illustrates the need for a prompt and thorough assessment when patients present with any atypical psychiatric symptoms or changes in the mental state. Brain imaging should be undertaken.

Treatment of diagnosed depression is problematic in patients with brain tumors. The timing of the initial prescription of the medications relative to the diagnosis of the tumor is unknown. This case leads to a question: is

depression the cause or the consequence of such a slow-growing tumor as meningioma?

Some studies have shown that the extent of surgery has no relationship to depression [16, 17]. The quality of life also improves with a gross total resection [18]. In our case depression significantly improved after surgical resection. Several factors may be involved with this relationship. Total resection of meningioma that is disrupting or compromising limbic pathways that are involved, have effect of decompression on brain tissue. Thereafter, those pathways may function better after surgery. Both anatomic and physiological perturbations in the brain are likely involved in the associations between depression and brain tumors. In our case, intraoperatively and on MRI, there were no signs of edema and complete resection of

meningioma (Simpson gr. I) led to a complete remission of depression symptoms.

The organic cause should be considered when a patient aged over 50 years presents with the first depressive episode which is resistant to psychiatric treatment, and who is without a history of mental illness. The first depressive episode is a clinical condition with principal indication for cerebral CT-scan. Consideration of brain imaging should not be limited to neurological symptoms in psychiatric patients, but must be also considered in all psychiatric patients who present with atypical psychiatric symptoms or when there is a change in clinical presentation of psychiatric symptoms. The doubt whether depression is caused by a large meningeal tumor still remains. In our case a total resection of meningioma resulted in a complete remission of depression symptoms.

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Повезаност менингиома конвекситета са депресијом: приказ болесника

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КРАТАК САДРЖАЈ

Увод Менингиоми су спорорастуће екстрацеребралне лезије које дуго могу бити неуролошки мирне и презентовати се само депресијом.

Приказ болесника Код 65-годишње жене развила се велика депресивна епизода и она је две године лечена анти-депресивима. Међутим, није реаговала на медикаментну терапију и није било побољшања стања. Два месеца пре него што је примљена у болницу, након појаве епилептичког напада, дијагностикован је велики темпорални менингиом конвекситета, који је одговарао електроенцефалографском и налазу компјутерске топографије мозга. Болесници је ура-

ђена остеопластична краниотомија и у целости одстрањен менингиом конвекситета, темпорално лево. Патохистолошким налазом је потврђен фибробластични менингиом.

Закључак Тоталном ресекцијом менингиома конвекситета и декомпресијом можданог паренхиме у регији лимбичких веза које су укључене може се допринети потпуној ремисији депресивних симптома. Овај приказ случаја указује на потребу за неодложним неуроимџингом мозга код болесника са нетипичним психијатријским симптомима, првом депресивном епизодом код особа старијих од 50 година или брзом променом менталног стања.

Кључне речи: менингиом; депресија; хируршко лечење