

Chronic Schizophrenia Or Meningioma?

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Psychiatric presentations of frontal lobe brain tumors that cause minimal or initially no neurologic abnormalities are well-documented.¹⁻⁶ In patients who have a chronic mental illness or personality disorder, the onset of a neurologic symptom can be easily dismissed as a symptom of the mental disorder or as being due to stress.⁴ In addition, patients with a chronic mental illness can be poor historians and uncooperative with neurologic testing. These issues make it difficult to diagnose a frontal brain tumor in a patient with a mental illness. Autopsy studies of schizophrenic patients in psychiatric hospitals have attempted to address the issue of whether brain tumors are more frequent in this group compared with the general population. In studies of more than 2000 autopsies each, Patton and Sheppard⁷ and Raskin⁸ found the frequency of meningiomas to be higher among psychiatric patients than the general population. The case described here presents the difficulties of diagnosing a frontal meningioma in a patient with chronic schizophrenia and highlights the symptoms that can be associated with this tumor.

Case Report

The patient was a 63-year-old woman who had chronic paranoid schizophrenia but had been stable on a regimen of perphenazine for more than 10 years. She had a history of hypertension controlled with clonidine and furosemide, osteoarthritis, and tobacco abuse. There was no known family history of mental or neurologic illnesses. She was self-sufficient, lived alone in an apartment, and drove a car. The events preceding the hospitalization for her present illness are summarized in Table 1. She reported that approximately 3 to 4 months before her hospitalization she developed episodes of urinary incontinence,

and 1 month later she developed leg weakness and had difficulty walking. One month before hospitalization, her psychiatrist noted an unusual gait on a routine visit and notified her family physician. A computed tomographic (CT) scan of her head was scheduled for 3 weeks hence.

She was examined in the emergency department 2 weeks before admission for complaints of generalized weakness and mild shortness of breath. No cardiac, metabolic, or neurologic abnormalities were found. Because of the potential side-effects of clonidine, however, this medication was discontinued. The following day she again came to the emergency department, complaining of falling without loss of consciousness. No abnormalities were noted on physical examination, 12-lead electrocardiogram, or routine metabolic studies. Her furosemide was discontinued, and the patient was offered hospitalization, which she refused.

Two weeks later the patient was hospitalized after she stated she was unable to rise from a sitting position. Her relatives stated she had stopped driving a car during the previous month because she had difficulty walking from her car to her apartment, and they expressed concern about a shuffling gait. The patient denied headaches or vision changes. On examination in the emergency department her blood pressure was normal. Other than appearing apathetic, there was no abnormality in her mental status examination. When initially seen she was too weak to stand, but after admission it was observed that she walked to the bathroom to smoke. The only abnormalities noted by a neurologist's examination were bilateral leg weakness and a narrow-based, shuffling gait. A CT scan of her head performed 2 days after admission revealed a ring-enhancing mass lesion of the left frontal lobe. The results of a subsequent magnetic resonance imaging (MRI) indicated this lesion to be a probable meningioma. She underwent a total excision of a left frontal tumor, which was confirmed by the pathology laboratory to be a meningioma. One week into her postoperative course she continued to have leg weakness and gait problems, though

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Table 1. Events Preceding Hospitalization for Frontal Meningioma.

Time before Hospitalization	Events
3 months	Onset of symptoms: episodes of urinary incontinence
2 months	Patient complained of leg weakness and difficulty walking
1 months	Psychiatrist noted gait disturbance
2 weeks	Patient in emergency department 2 consecutive days Day 1: Complaints of generalized weakness and shortness of breath Day 2: Complaint of falling
Patient hospitalized	

no urinary incontinence was observed. She was transferred to a rehabilitation hospital.

Discussion

The importance of early diagnosis of a meningioma has been noted because of improvement of both neurologic and psychiatric symptoms after removal of the tumor in several cases.^{3,5} Falling, leg weakness, gait abnormalities, and episodes of urinary incontinence were the neurologic symptoms present in this case and have been similarly reported in other cases of meningiomas.^{2,4,5} In the case reported by Blustein and Seeman,⁴ a 45-year old man with a year-long history of depression and somatization disorder complained of fluctuating symptoms of upper and lower extremity weakness not reproducible on neurologic examination, and his condition was diagnosed to be functional. One year later when his leg weakness returned, he was reexamined, and a large, inoperable temporal meningioma was diagnosed.

In the case presented here, the patient's neurologic symptoms initially were not reproducible on examination in the emergency department and were attributed to possible side effects of the antihypertensive medications, clonidine and furosemide. On the day of admission, the patient could not walk in the emergency department, but she walked without assistance to the bathroom several hours later. There was concern among the staff that her complaints had a psychologic rather than organic basis. Because her mental illness was otherwise stable, however, a neurologist was consulted and a CT scan of her head, which had been initially ordered by her family physician 3 weeks earlier, was performed. The diagnosis of the

tumor might have been delayed by several factors: the fluctuating nature of the patient's symptoms, the potential relation of symptoms to the use of antihypertensive medications, and the patient's apathy and possible poor judgment reflected by her initial refusal of hospital admission, behaviors not uncommon in patients with chronic schizophrenia. It is also possible that her apathy was a behavioral symptom of the frontal lobe tumor.

Besides leg weakness and gait changes, her other symptom suggesting neurologic impairment was occasional urinary incontinence. Maurice-Williams,⁹ in a study of 50 consecutive cases of frontal lobe tumors, found 14 percent had a micturition syndrome described as urinary frequency, urgency, and incontinence. One case noted by Maurice-Williams was that of a 68-year-old nurse who developed nocturnal incontinence and had a normal urological evaluation, but whose symptoms progressed to hemiparesis and dementia within a few months. All her symptoms resolved after removal of a frontal meningioma. The author hypothesized a control center for micturition in the frontal lobes that can be affected by frontal lobe tumors.

Headaches and vision changes are neurologic symptoms noted years before the diagnosis of a meningioma in two cases presented by Hunter, et al.⁵ but were ignored initially in one case because the patient was demented and in the second case because the patient had hallucinations and delusions. Our patient denied either of these symptoms and had normal visual field testing.

Though it is unknown whether meningiomas can cause schizophrenic symptoms years before neurologic symptoms are manifested, there have been patients who after suffering more than 17 years from chronic schizophrenia developed neurologic symptoms and were subsequently found to have meningiomas.^{3,6} In this case, the patient had received the diagnosis of chronic schizophrenia at least 10 years before developing neurologic symptoms. It is therefore possible that her psychiatric symptoms had an organic cause.

Conclusion

The case presented here highlights the difficulties of diagnosing a frontal meningioma in a patient with chronic schizophrenia, particularly when other medical problems are present. Furthermore, frontal meningiomas can initially produce

symptoms of a mental illness at least several years before any neurologic impairment develops. Even if psychiatric symptoms are caused by a brain tumor, patients can respond to psychotropic medications and remain stable.³ Initial neurologic symptoms might be easily dismissed because of difficulties in evaluating these symptoms in a patient with chronic schizophrenia. Complaints of headaches, vision changes, neurologic deficits, and urinary incontinence should cause one to suspect a brain tumor in a patient with chronic schizophrenia. The pre-existing diagnosis of a chronic mental illness should not preclude the consideration of a possible neurologic disorder.

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