Case Report

# Acute psychosis owing to recurrence of craniopharyngioma in an elderly woman

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**Abstract**

A 63-year-old woman, after 5 years of resection of craniopharyngioma, developed recurrence of tumor with acute onset of psychotic symptoms. After 4 years of resection of craniopharyngioma, the patient presented with psychotic symptoms of varied delusion of reference, persecution, black magic and occasional auditory hallucinations. On physical examination, she showed no neurological deficit. Her blood investigations were at normal levels. Her recent magnetic resonance imaging brain scan showed large cystic lesion supposed to be a recurrent mass in sellar and suprasellar regions. After 2 months of antipsychotic treatment, her delusions and hallucinations were much decreased to extent that now she can do some household work. Her psychosis was controlled while she awaits neurosurgical intervention for recurrent craniopharyngioma. Acute psychosis is rarely found in elderly people and after few years of craniotomy for craniopharyngioma resection. So, the psychosis can be associated with the recurrence of craniopharyngioma. Such psychosis needs surgical intervention for primary cause.

**KEY WORDS:** Craniopharyngioma, acute psychosis, recurrent craniopharyngioma

## Introduction

Craniopharyngioma is a metaplasia of adenohypophyseal cells in the pituitary stalk or gland. It is supposed to develop owing to transformation of embryonic squamous cell structures along the path of the craniopharyngeal duct. It shows the bimodial presentation with higher incidence in children than adults.[1] In general, childhood and adult-onset lesions show similar features.[2]

There is a close proximity and strong attachment of craniopharyngiomas to the adjacent nervous and vascular structures, leading to diversified presentations. Craniopharyngioma is related to extreme long-term multisystem along with psychosocial morbidity and mortality, particularly in female subjects.[3]

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Management of craniopharyngioma shows a greater cure rate.[3] Subtotal resection and postoperative radiotherapy provide effective long-term disease control.[4] Studies on craniopharyngioma in adult patients recommend better neuropsychological functioning after resection, with postoperative developments to normal functioning being achievable.

Although the frequency is uncommon, psychiatric complications are observed in patients experiencing resection of a large skull base tumor affecting the temporal lobe, short-term memory disturbance, and motor dysphasia and psychotc symptoms.[5]

Initiation of postoperative acute major depression in patients, although no history of psychiatric complaint, is observed after skull base surgery.[5] Cognitive impairment and amnesia in craniopharyngioma is found because of the pressure effect and of the postoperative sequelae of surgical resection of craniopharyngioma causing damage to adjacent areas.[6]

These results specify that committed long-term follow-up of craniopharyngioma patients is necessary.[3] Some of the common postsurgical incidences are relapses after complete resection and developments of residual tumor after partial resection.[7] Adult patients treated for craniopharyngioma have shown to have impairment in quality of life.[2]

## Case Report

A 63-year-old woman was brought by her husband for abnormal behavior since 4 months (2014), in the form of suspiciousness toward her daughter-in-law doing some black magic on her. She felt neighbors watching her and keeping eye on her activities. She presumed to talk with her distant relatives directly through air/satellite and would complain about her daughter-in-law. Occasionally, she heard voices of some unknown people passing bad words and sometimes voices of her relatives, she would talk to herself and would become irritable on trivial reasons with decreased appetite and disturbed sleep.

These symptoms were since 4 months for which she was treated by a neurologist with high-dose quetiapine and etizolam for 2 months; only sleep improved with oversedation initially, and positive symptoms persisted. There was no history of similar episode and of any psychiatric illness in any close family member.

Patient revealed history of palpitation, headache, and diminished vision 5 years back in 2009. Coronary artery bypass grafting for critical triple vessel disease was done first, after which, a neurosurgeon was consulted for persistent neurological symptoms. On magnetic resonance imaging (MRI) brain, a cystic mass was found in sellar and suprasellar region. Cystic pituitary stalk lesion, epidermoid cyst, or Rathke's cleft cyst was opined. Patient showed no history of hypothyroid/hyperthyroid/cushingoid/acromegalic features and no history of polyurea, polydipsia, or limb weakness. Two months after first development of neurological symptoms, sublabial rhinoseptal transsphenodial craniotomy for primary surgical excision of mass was done. Histopathology report of resected mass revealed it to be craniopharyngioma. Postcraniotomy, patient was relieved from the neurological symptoms and completely well for subsequent 4 years.

On presentation, after 4 years 4 months of craniotomy, on mental status examination, she showed medium built and short stature and was well groomed. She appeared suspicious, worried, and easily distressed to surrounding with poor eye-to-eye contact; rapport was difficult to establish as her mood was euthymic and affect was restricted, with poor attention and concentration; her speech was continuous, incoherent, and irrelevant.

In thoughts, she saw delusion of reference, delusion of persecution, and delusion of black magic; she denied worthlessness, hopelessness, or any suicidal or homicidal ideas.

In perceptions, she heard occasional auditory hallucinations of known and unknown people. She was well oriented to time, place, and person. Her remote memory was intact, but recent and immediate memory was impaired. Her general knowledge was adequate and abstract thinking intact; her concepts were not clear; and her judgment was impaired with no insight into the illness. Her physical examination was normal with no neurodeficit at present.

Her blood investigations were at normal levels including blood sugar level and thyroid function test. Her recent brain MRI after 7 years of primary resection of craniopharyngioma showed cystic lesion in sella and suprasellar cistern, which could be residual or recurrent mass.

She was treated with low-dose antipsychotic, 2.5 mg olanzapine tablets in night for 5 days, which was increased to 5 mg over next 15 days. On follow-up her sleep, appetite, and irritability was well improved with some improvement in delusions but hallucinations were same; so, the dose was further increased to 7.5 mg and then 10 mg over next 2 months. After 2 months of her treatment, husband was quiet happy as her delusions and hallucinations were much decreased to extent that now she can do some household work, keep quite at home, would listen to take medicines on her own with good appetite, and weight gain that they wanted.

Still, the patient is well maintained on same doses of antipsychotics and on regular follow-up, while awaiting neurosurgery intervention for recurrence of intracranial cystic lesion.

## Discussion

Generally, craniopharyngioma, being a slow-growing tumor, the time gap from the beginning of the symptoms and identification ranges from 1 to 2 years. Their manifestations relate to the various connections of the hypothalamic-pituitary complex and surrounding structures. The endocrine, autonomic, and behavioral problems such as hyperphagia and obesity, psychomotor retardation, emotional immaturity, apathy, short-term memory deficits, and incontinence are produced by the thalamus and frontal lobes correspondingly.[8]

Karavitaki et al.[1] found that headache and visual field defects as most common presenting clinical features of craniopharyngioma. No considerable variation in the outcome of tumors found in childhood or adult life were observed in this large study. Fruitful result were obtained from gross total removal with regard to relapses. The median time of first relapse was 2.5 (range, 0.5–36) years.

Similarly, in this case study, the elderly woman presented symptom of headache and diminished vision due to pressure effect of cystic lesion, which was relieved on surgical resection. Patient was asymptomatic till 4 years of surgical resection but developed acute psychosis owing to recurrence of cystic lesion of craniopharyngioma.

Patients with pituitary cancers frequently show behavior alterations arising from upward extension of the tumor to other structures, especially those in the diencephalon, commonly noted in patients with craniopharyngioma. They have been reported to develop the entire spectrum of psychiatric symptoms, such as depression, apathy, paranoia, delusions, and hallucinations.

In a study by Russell and Pennybacker,[9] 33% patients of craniopharyngioma showed severe mental instabilities

that controlled their clinical picture and 13% patients originally approached the psychiatric hospitals for diagnosis and therapy.

Sade et al.[5] found that postsurgical resection of large extraaxial tumor lead to severe depression with insomnia and auditory hallucinations for several months.

According to Hadi et al.,[10] even after removal of the craniopharyngioma tumor, patient can experience psychotic symptoms irrespective of whether the symptoms are secondary to the tumor itself or its therapy.

Owing to the relationship between structural brain abnormalities and mental illness, craniopharyngioma also needs psychiatric intervention.[11]

In our study, there was no postsurgical neuropsychiatric sequelae, but after 4 years, acute psychosis developed in the elderly female. The recurrence of the craniopharyngioma was supposed to be causing the psychosis owing to involvement of the adjacent structure.

Disturbances of the interlinks between the frontal and temporal lobes, the anterior insula, the mediodorsal thalamic nucleus, and the corpus callosum can lead to a hypothesized disconnection syndrome and evident as psychosis including schizophrenia.[11] As there may be frontal–subcortical circuitry involvement, patients of craniopharyngioma are also at risk for psychiatric complications, specifically depression, as noted by Spence et al.[12]

In recurrence of craniopharyngioma after surgical recession, adjuvant radiotherapy is found to be beneficial in preventing tumor re-growth,[1] thereby more than one operation. Craniopharyngioma patients showed reduced quality of life in the physical items, with predisposition to female gender.[2]

## Conclusion

Acute onset of psychosis is rarely found in elderly people after few years of craniopharyngioma resection and is associated with recurrence of craniopharyngioma tumor. It may be caused owing to close relation of craniopharyngioma and frontal–subcortical structures, indicating relationship between structural brain abnormalities and mental illness.

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