**CASE REPORT**

# PSYCHOSIS POST CRANIOTOMY FOR CRANIOPHARYNGIOMA

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**Abstract**

***Objective:*** **This case report highlights psychosis post craniopharyngioma surgery.** ***Methods:*** **We report a case of a young Malay lady who presented with psychotic symptoms after she underwent craniotomy for craniopharyngioma.** ***Results:*** **Presence of prominent hallucinations and delusions after removal of the tumour and the symptoms lasted more than a month. The psychosis subsided with antipsychotic.** ***Conclusion:*** **Psychosis post craniopharyngioma surgery is still possible whether possibly due to the residual tumour or as a result of treatment sequealae.** ***ASEAN Journal of Psychiatry, Vol. 14 (2): July – December 2013: XX XX.***

**Keywords: Psychosis, Craniotomy, Craniopharyngioma**

## Introduction

Craniopharyngioma is a benign pituitary tumour which originates from Rathke's pouch. Patients with this tumour normally experience symptoms of increased intracranial pressure, hormonal imbalances, and vision problems. However, behavioural and learning problems may be present [2]. Treatment modalities for craniopharyngioma include surgery and radiation therapy depending on the size of the growth [1]. Patient might experience neuropsychiatry symptoms secondary to the tumour itself and also its treatment [3]. This case illustrates the development of psychotic disorder post removal of the tumour and is not to be confused with delirium.Although patient had the tumour four years ago and was on steroid therapy prior to surgery, no psychosis was reported.

## Case Report

A 26-year-old Malay lady diagnosed to have craniopharyngioma for the past four years, presented with bilateral hemianopia and cranial nerve VII palsy. She was on tablet Prednisolone 2.5mg daily since she was diagnosed to have craniopharyngioma. She also took tablet L-thyroxine 100mcg daily for her hypothyroidism. There were hormonal imbalances since she had this tumour. She had undergone transcranioresection and debulking of tumour for removal of her tumour on 22$^{nd}$ of October 2011. Post-operatively, her oral Prednisolone was withheld. She was given intravenous hydrocortisone and later was changed to tablet Hydrocortisone 20mg on morning and 10mg nocte.

She was referred to our psychiatric department at day 10 post-op after she was noted to have abnormal behaviour while in the ward.There were no psychotic symptoms noted prior to this episode, whether due to steroid therapy,

secondary to her craniopharyngioma itself or in relation to her thyroid problem. She reportedly had 2nd person auditory hallucinations whereby she heard both male and female voices talking to her about her husband leaving her. The voices were usually heard during daytime and even at night. Patient felt worried and scared about the voices. Patient also experienced visual hallucinations in which she could see vague shadows of humans surrounding her. She also had persecutory delusion towards others in which she felt that people were trying to harm her. She denied any symptoms of mania or any depressive symptoms. There was no history of substance abuse or any family history of psychiatric illness.

Premorbidly, patient is an introvert type of person, had few friends, and prefers to stay at home with her family. She had good relationship with her family members and was brought up in a good functional family. Collateral history from her husband noted that since she was diagnosed to have craniopharyngioma, there were no behavioural changes or any cognitive impairment noted. However, post operatively, she displayed clinginess towards her husband and repetitively needed reassurance that her husband was around. She appeared more distressed when her husband was not around. She was noted to have short attention span and was talking irrelevantly most of the time.

Mental state examination, revealed a young Malay lady with medium built and short stature dressed in hospital attire. She appeared suspicious, worried and easily distressed about her surroundings. She was not forthcoming, had poor eye contact, and it was difficult to establish rapport with her. She talked in Malay language during the interview. The tone, rate and volume of her speech were increased, rather disorganized, and mostly were irrelevant and incoherent. She described her mood as euthymic, however her affect was rather restricted. She had 2nd person auditory hallucinations, visual hallucinations, and persecutory delusions. She denied any suicidal or homicidal ideations. Cognitive assessment revealed that she was orientated to place and person but not to time. Her attention and concentration were poor. Her remote memory was intact, but her immediate and recent memory were impaired. Her general knowledge was adequate and her abstract thinking was intact. However, her judgement was impaired and she had poor insight towards her illness.

Physical examinations were unremarkable. Neurological examinations noted optic nerve lesion with bilateral hemianopia and upper motor neuron facial nerve palsy. Her blood investigation results were within normal range except for her serum prolactin which was high (550.5 mIU/L) and low serum Thyroid Stimulating Hormone (TSH) which was 0.15 uIU/ml. Both triidothyronine ($T_3$), and thyroxine ($T_4$) levels were within normal range. Her Magnetic Resonance Imaging (MRI) of brain and pituitary gland on 7th of May 2011 reported presence of lobulated mass in sella tursica compressing and displacing the third ventricle to the left of midline, compressing the brain predominantly on the right side, and displacing it posteriorly. Histopathological examination (HPE) of the removed tumour was consistent with adamantinomatous craniopharyngioma.

Patient was treated with tablet Risperidone 1mg nocte and during her follow-up at our psychiatric clinic after six weeks of antipsychotic, her psychotic symptoms were much improved. Patient reported that the frequency and intensity of her auditory hallucinations markedly reduced. Her husband claimed that her paranoia also became less. Her antipsychotic was increased to tablet Risperidone 0.5mg on morning and 1mg nocte. She underwent recraniotomy and excision of tumour five months later when her second Magnetic Resonance Imaging (MRI) findings showed residual tumour. Post operatively, her psychotic symptoms persisted and thus her antipsychotic was continued. However, patient discontinued her antipsychotic as she believed that she is mentally well and opted for alternative medicine from the traditional healer.

**Discussion**

This case illustrates a challenging case as the psychosis develops post operatively and the symptoms persisted even after the second

surgery. Delirium is unlikely in this patient as she did not have clouding of consciousness and her orientation was still intact. Furthermore, her psychotic symptoms persisted more than one month making the diagnosis of Brief Psychotic Disorder unlikely.

Changes in affectivity, emotional lability, and depression were sometimes seen although 70% of pituitary tumours do not produce psychiatric symptoms [5]. Endocrine dysfunction and visual disturbances were quite common [3,4]. This patient had both hyperprolactinaemia and hypothyroidism, and she had worsening of her vision as she developed bilateral hemianopia. Neuropsychiatric manifestation has been reported due to craniopharyngioma. About a third of patients with craniopharyngioma were reported to have psychiatric symptoms including reduced short-term memory and also personality changes [6]. Whereas, the prevalence of short-term memory loss and personality changes after treatment of craniopharyngioma is 40% and 31% respectively [4]. These were consistent with the findings observed in this patient.

Spence et al reported a case of craniopharyngioma that presented with depressive disorder [7]. For any patient who presents with atypical depression, one should look for the possibility of diencephalic lesions [7]. Carroll et al reported a patient with craniopharyngioma who presented with odd behaviour and deterioration in working performance [8]. They suggested that if any employees presented with unexplained marked deterioration in working performance or any change in behaviour, organic pathology should be excluded [8]. Another case report by Izci et al reported a patient who presented with psychosis, and was found to have craniopharyngioma [9]. They concluded that any patient with unexplained behavioural changes must be seen by psychiatrists to rule out an organic pathology [9]. A case of craniopharyngioma that presented with psychotic symptoms, disinhibition and changes in personality without neurological deficits was reported by Sinai and Wong [10]. Massengale et al reported a case with reversal of catatonia after surgical resection of craniopharyngioma [11]. They suggested that for any profound catatonia one should look for aetiology, including the possibility of suprasellar/hypothalamic lesion [11].

Psychosis in this patient could possibly arise due to residual craniopharyngioma even after surgical removal, high dose steroid that had been given post-operatively, or as a complication of craniopharyngioma surgery. Neuropsychiatric complications due to steroids include psychosis, mania, depression, suicidality, irritability, anxiety, and impaired cognition [12]. In conclusion, although craniopharyngioma is a rare intracranial tumour, even after removal of the tumour, patient might present with psychotic symptoms regardless whether the symptoms are secondary to the tumour itself or its treatment.

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Received: 30 March 2013 Accepted: 22 April 2013