



## PSYCHOSIS IN CASE OF ARACHNOID CYST

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### ABSTRACT

The Arachnoid cysts are benign lesions, they are in fact space-occupying lesions containing CSF. They are rare lesions and account for only 1% of all intracranial space-occupying lesions. Psychosis on the other hand is in itself a major mental illness and finding a cause can be extremely difficult. However the probable association of an underlying large arachnoid cyst with pressure effects on temporal lobe cannot be overlooked when found in such cases. Hence the temporality of cause and effect can become important during history taking as to reaching out to the etiology if at all it can be said in that manner.

**KEYWORDS :** Arachnoid cyst, intracranial lesion, psychosis, temporal association, mass effect, neurobehavioural disorder

### INTRODUCTION

Cysts are commonly found in the brain but the incidence of an Arachnoid cyst in the intracranial space is approximately 1%. From an etiological point of view we should distinguish between true cysts (of a congenital nature) and false ones, which are secondary to the post-inflammatory accumulation of CSF during cranial traumas, infections or intracranial haemorrhages [1,2]. Arachnoid cysts can appear in any area of the central nervous system, though they are more frequent in the Sylvian fissure, where they are found in about 50% of cases [3]. They occur roughly twice as often on the left side as they do on the right, although the reason for this is unknown [4] and there is a preponderant ratio of 3:1 in male as opposed to female patients [5].

Arachnoid cysts are often diagnosed before adulthood (60–90% prior to the age of 16) [8]. In most cases diagnosis is accidental, and it may even result from a fortuitous discovery during a post-mortem examination [3,4,5]. The clinical picture of these anomalies varies depending on their location and the patient's age. In adults, headaches and convulsive episodes are the most common [6]. Other signs and symptoms include ataxia, ocular alterations, focal signs, dizziness, and altered memory [7].

Although arachnoid cysts are classically considered to be incidental lesions when found in people with psychiatric disorders (and no elementary neurological signs) [6], some articles point to the existence of a putative causal relationship [4,5]. The discovery of an arachnoid cyst in a person with a psychotic disorder raises diagnostic and therapeutic problems that are extremely significant from a clinical point of view [4,5,6,7].

### CASE PRESENTATION

This 32 year old man was brought by his relatives with history suggestive of gradual socio occupational decline and odd strange behaviour which were noticed by his family friends and business colleagues. He had been a good and hard working employee in a construction firm where he had worked for last 11 years. However over the last 4 months he had begun to show strange eccentric behaviour in the form of fearing people around him, believing that strangers were talking and planning against him.

He gradually developed strange unseen voices which would talk to him directly and command him to do certain tasks which he would resist. He began to show poor self care, became self absorbed and aloof. He was brought to the psychiatric centre after a violent outburst against a colleague in work place for no apparent reason

and he had to be physically restrained by others. He was noted to be muttering to self and chanting names of gods repeatedly.

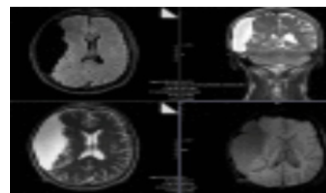
On examination he was noted to be having Weight: 70 kg. Height: 180cm. Blood pressure: 100/60mmHg. Body mass index: 21.6kg/m<sup>2</sup>. Pulse rate: 70 bpm. Temperature: 36.7°C. Arterial oxygen saturation: 98%. Lungs were well ventilated without noise. Heart beat was rhythmic, without murmur. Abdomen was soft and depressible, the lower part being slightly painful to palpation.

There were no masses, enlarged organs, or evidence of peritoneal irritation. There was no costovertebral angle tenderness. There was no motor or sensory deficit. There was no signs of a neurological focus. Osteotendinous reflexes were normal. Gait was normal.

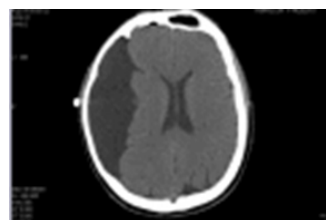
Psychometric test revealed the Mini-Mental State Examination [22] was normal (29/30). Rorschach psycho diagnostic test revealed features of psychosis and mild cognitive deficits.

A cranial CT revealed the presence of an arachnoid cyst at the level of the left Sylvian fissure, with a marked mass effect on the left temporal and frontal lobes and the left lateral ventricle. There was also an extensive pneumatisation of the left frontal sinus.

It also confirmed the size of lesion to be 3 by 4 by 3 cm in size and also revealed the existence of a left temporal lobe hypoplasia that was associated with the arachnoid cyst (figure 1 & 2).



**Figure 1**



**Figure 2**

He was managed with Quetiapine at a dose of up to 300mg/day, clonazepam at a dose of up to 3mg/day. After detailed pre op evaluation he was taken up for endoscopic surgery.

4 weeks post op there was significant reduction in his psychotic symptoms with 50% reduction in PANSS score and normal scores on BDI and HAM-A

He was discharged from hospital after 2 months and was advised for regular follow up in Psychiatry OPD to keep check on his status of remission.

### Discussion

This patient's clinical picture is characterised by the insidious development of psychotic symptoms: delusional ideas with complex auditory hallucinations in the second and third persons; and behavioural changes with aggressive behaviour.

The patient did not display the typical characteristics which make it easier to distinguish between non-organic psychosis and organic psychosis such as abnormal vital signs, recent memory changes, age above 40, disorientation and an altered state of consciousness [1,23]. In fact, it is difficult to be sure whether we are in the presence of an organic psychotic disorder or of a simple coincidence in which the arachnoid cyst is just an 'innocent bystander' to the development of a functional psychosis. Although the cyst seems to be congenital, it did not cause any symptoms earlier in life. Nevertheless arachnoid cysts may enlarge and interfere with adjacent neural structures or CSF circulation [7]. The mass effect shown on the neuroimaging studies suggests that this might be the case, and what started as an 'innocent bystander' may not be so innocent after all.

Remission of symptoms following surgical treatment [8], association of psychiatric symptoms with neurological changes [8,9], advanced age, absence of family history, evidence of compression of the temporal lobe and neighbouring structures [10], and changes in the neuropsychological and neurophysiological tests [10] are all mentioned as factors that suggest an etiologic relationship of arachnoid cysts to the psychiatric disorders.

The presence of some of these factors – particularly the evidence of hypoplasia of the left temporal lobe and the neuropsychological changes compatible with those described for orbitofrontal lesions strengthens the possibility that this lesion may have played a part in the etiopathogenesis of the psychotic symptoms.

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