

# Middle cranial fossa arachnoid cyst presenting with obsessive compulsive behaviour associated with psychosis – two cases

Arachnoid cysts are benign space-occupying lesions of the brain containing cerebrospinal fluid (CSF). From an etiological point of view, the primary or true cysts are congenital in nature and false cysts are secondary to the post-inflammatory accumulation of CSF during cranial traumas, infections or intracranial hemorrhages.<sup>1</sup>

There have been only two case reports of posterior fossa arachnoid cysts presenting with a psychiatric disorder. One of them presented with drop attacks and the patient was diagnosed with conversion disorder.<sup>2</sup> The other, with a psychotic disorder in the form of delusional ideas with hypochondriac content, and second and third person complex auditory/verbal hallucinations.<sup>3</sup> In the last decade schizophrenia like presentation has been reported in association with temporal lobe cysts.<sup>4-7</sup> Whilst there have been a few reports of arachnoid cysts accompanying psychoses, no such association with obsessive compulsive behaviour has been reported. We report on two patients with small arachnoid cysts of the middle cranial fossa, both of whom presented with such behaviour followed by psychosis without any neurological deficit. Both were successfully treated with risperidone.

## Case one

A 23-year-old unemployed single man was brought by his father after noticing some change in his behaviour over a period of four years. He became socially withdrawn, was mostly alone and would become irritable with minor provocation. He spent hours bathing and washing his clothes. He would often check his bed, utensils and clothes for stains. Over time it was also noted that he was talking and smiling to himself without apparent reason, and on occasion he would be abusive to family members. Despite the bathing behaviour he would neglect his personal care and refuse food with significant weight loss over the years. During the interview he was alert and oriented. The patient justified his sleeplessness at night and many other behaviours by describing hearing voices which insulted him directly and also discussed him. His occasional anger outburst was explained by his delusional belief that some of

the family were planning to have a share in the inherited property of his father. The man continually blamed his poor memory on villagers who he claimed could steal his thoughts. He displayed delusions with a persecutory theme, thought broadcasting, and second and third person auditory hallucinations. The patient was however euthymic, and his affect was appropriate.

## Case two

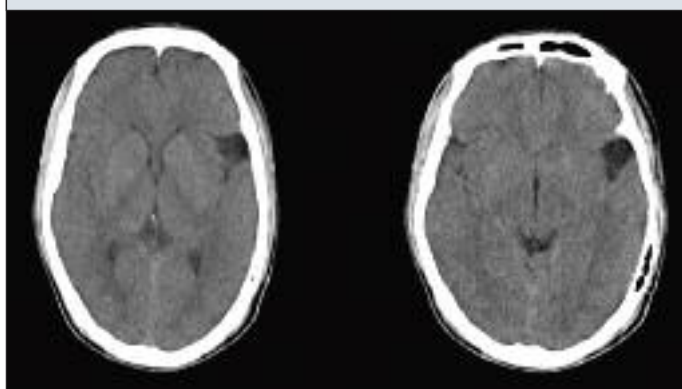
A 31-year-old male laborer was referred for due to reduced motivation and frequent bathing. His symptoms also included hearing voices. He was neglecting his duties and personal care and remained self-absorbed most of the time. His sleep was reduced to two to three hours at night. On an initial interview, the patient was alert and oriented. The patient explained his behaviour by saying that he often doubted the cleanliness of his body and clothes, and heard voices discussing about him. The voices were usually heard planning against him. This patient also displayed delusions with a persecutory theme and third person auditory hallucinations. The patient was anxious with occasional inappropriate smiling.

Neither of the described cases had any insight into their condition. The Mini-Mental State Examination in both the patients was normal. Past medical history included a blunt head trauma in the first case at the age of 11 but it was not associated with unconsciousness, amnesia or seizures. Neither of the patients admitted any substance abuse. The family history included a cerebrovascular accident associated with hypertension in father of the second patient.

The physical examination and laboratory investigations were unremarkable in either cases. Serological tests for hydatid disease and tuberculosis were also normal. However, the cranial CT scans of both patients revealed small arachnoid cysts in the left middle cranial fossa extending into the adjacent sylvian fissure without a marked mass effect on either the temporal or frontal lobes and the lateral ventricle (Figure 1). An EEG revealed no abnormality. Neuropsychological examinations (Digit Span Test, Bender Gestalt Test, Trail Making Test and Stroop Test) in both the patients suggested a deficit in left hemisphere functioning (especially dorsolateral and orbitofrontal cortex) resulting in problems with visual scanning and mental flexibility, which is commonly encountered in head injury patients. Risperidone 6 mg/day with trihexyphenidyl

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**Figure1: CT scan of brain of case one (left) and case two (right)**

2 mg/day was commenced in both the cases. Both showed improvement with a general reduction in psychosis and whilst the delusions remained, their intensity diminished and the beliefs were held with less conviction - during follow up (three months). Both patients gained increasing insight into their condition.

The trauma which the first patient suffered at his age of 11 suggests a probable secondary etiology related to arachnoid cysts. Absence of family history, presence of atypical OC symptoms at the onset and neuropsychological changes may also indicate some organic etiology. Nevertheless, an absence of organicity defining features like focal neurological deficits, altered consciousness, memory changes<sup>7</sup>, abnormal vital signs, advanced age (above 40 years)<sup>8</sup> and EEG changes<sup>9</sup> – weakens the possibility that the lesions played a part in the etio-pathogenesis of the psychotic symptoms. As no links between arachnoid cysts and psychotic symptoms have been clearly established in the literature, we diagnosed both the cases as schizophrenia. Despite the possibility that patients would not respond fully to conservative treatment because of the associated neuropsychological alterations<sup>10</sup>, we opted against surgical intervention as there was no focal neurological signs, intracranial hypertension or mass effect. Moreover, the literature shows that these types of lesion could resolve spontaneously<sup>11</sup>, further surgical interventions are always associated with possible morbidity.

These cases highlight the fact that OC symptoms can precede schizophrenia like psychosis in association with

small arachnoid cysts of the middle cranial fossa. In addition, it appears that a trial of an antipsychotic may be an option in such cases before planning for surgery, especially if the size of the cyst is small and there is no mass effect.

Informed consent for the publication of the case material was obtained from both patients.

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