CASE REPORT

Late Onset of Schizophrenia-like Psychosis with Incidental Finding of Cavum Vergae: A Rare Case Report

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Abstract

Cavum vergae is a rare and often coincidental finding in several cases of late onset Schizophrenia as well as psychosis due to organic causes presenting in elderly patients. Cavum septum pellucidum (CSP) and cavum vergae (CV) have separately and together been described with an association with an increased risk of neurodevelopmental disorders and psychosis. Unfortunately, there is scant literature on the psychopathological significance of CV, and even fewer reports of isolated CV in late onset psychosis.

Keywords: Cavum Vergae, Cavum Septum Pellucidum, Schizophrenia

Introduction

Cavum Vergae is a rare anatomic variant of Cavum Septum Pellucidum and is often regarded as benign [1]. However there were several case reports based on post-mortem findings or neuroimaging which reveal a possible association of the presence of CV and CSP with late onset psychosis [2].

In this case report, we describe a 50 year old man who presented with a 6 month history of schizophrenia-like psychosis. Physical (including neurological) examination, bedside cognitive testing, and laboratory investigations were all within normal limits. Computed Tomography scans (CT) revealed that the patient had CV. The patient showed almost complete recovery from psychosis after 4-6 weeks of treatment with Quetiapine XR (50 mg/day). We briefly discuss CV in the context of vulnerability to psychosis. We will also discuss the significance of isolated CV as a benign versus a biological risk factor for neuropsychiatric illness.

Case Report

Mr RS is a 50 year old Malay male who presented with late onset of Schizophrenia-like psychosis. It was gradual in onset beginning somewhere in November 2020 where he started reporting subtle auditory hallucination. These hallucinations were initially not well formed. He eventually could hear voices which were second and third person in nature. These were a mixture of male and female voices which were commanding in nature. He felt difficult to resist these hallucinations and felt compelled to carry out acts like hurting himself; banging his head against the wall and attempting to take his life by jumping into a

nearby swamp but was stopped by his family members.

He subsequently began suffering from various delusions. He started to feel insecure as if everyone were trying to cause him harm and became very paranoid. He also had nihilistic delusions where he felt that the world was about to end and that his death was imminent. As a result, he became rather distraught but did not fulfill criteria for major depression. When he presented to us on March 2021, he was brought to casualty with prominent disorganized behavior. He was throwing things around in the house, neglecting his self-hygiene and was unable to perform basic activities of daily living which was now supervised by his wife and other family members.

Premorbidly, he was functioning as a lorry driver and fisherman well up to his current age prior to onset of illness. He had no other medical co-morbids or any other family members who were suffering from similar disorder. This patient was reviewed by neuromedical who noted that patient bilateral lower limb reflexes were slightly brisk. CT brain findings revealed slightly increased midline cerebrospinal fluid spaces anterior to the corpus callosum, suggestive of cavum vergae of normal variant. There were no other remarkable neurological findings. Neuro-medical team decided to treat patient conservatively. Baseline blood investigations as well as infective screening were within normal limits. There was no history of substance intake.

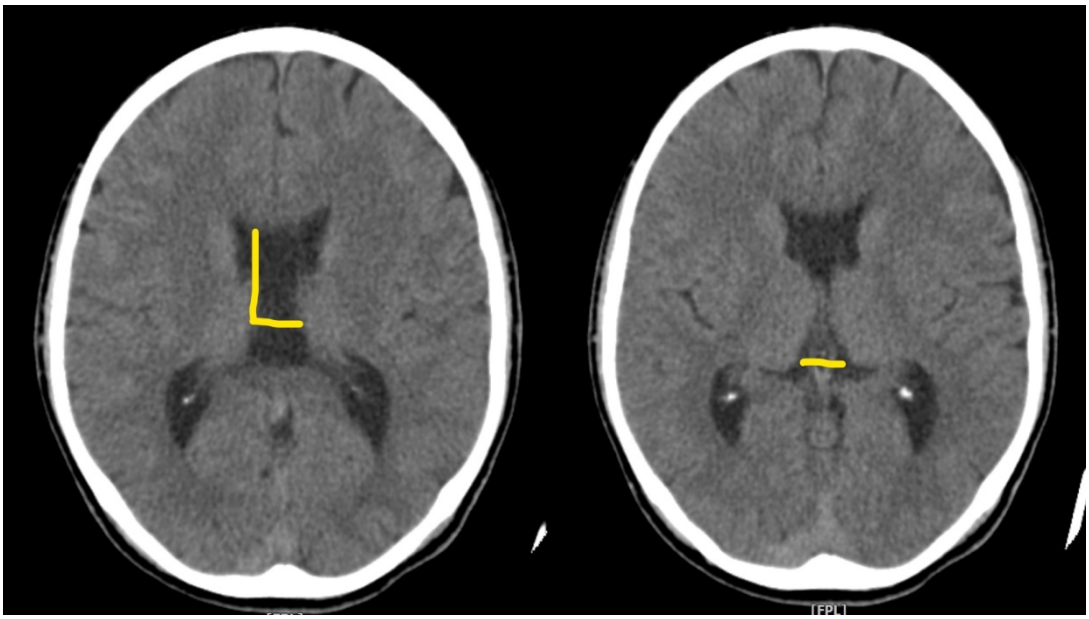

Figure 1. Presence of CV at areas marked (highlighted yellow)

Treatment from a psychiatric point of view was more challenging. Mr RS appears to be very sensitive to neuroleptics and developed severe akathisia to T. Olanzapine 5mg ON. Although his disturbing psychosis such as command hallucinations and paranoia abated with treatment, he became very agitated and was pacing around the ward throughout the night. He had to be offered regular doses of benzodiazepines to help ameliorate his discomfort. There were no extrapyramidal symptoms however. He tolerated switch to T.Quetiapine XR 50mg ON. In view of his age, the treating team

had to strike a fine balance between treatment of his psychosis and the side effects of the medications which he was very prone to.

Discussion

Cavum Vergae is the posterior extension of a Cavum Septum Pellucidum, a normal but rare anatomic variant. The cavity was first described by the Italian anatomist, Andrea Verga, in 1851 [1]. It may exist as a separate cavity, or may communicate with the Cavum Septum Pellucidum. Its incidence is estimated at approximately 2%. Apparently, it has no identified clinical significance. It is sometimes given the moniker "6th ventricle," which is an anatomic misnomer, since it does not contain cerebrospinal fluid and is not lined by ependymal cells [1].

Although CV may be separately present as a normal variation without clinical significance in some individuals, several epidemiological studies have suggested that their presence in the brain might lead to developmental abnormalities, which in a long run may affect midline structures [3]. These also include the limbic system of brain leading to diversity neuropsychiatric disorders.

A large CSP, especially in association with CV, suggests abnormality of the septal nuclei as well as dysgenesis of midline forebrain structures such as the hippocampus and the corpus callosum [4], [5]. If a large CSP or a CSP with CV predispose to schizophrenia, one might expect poor neuroadaptation from an early age, earlier onset of illness, and perhaps poor response to treatment, as well, in affected persons [5]. However, in some cases, onset of psychosis is delayed and present in the later stage in life as described by various case reports. In a systematic review by Trzesniak et al in, the deformity of Cavum Septum Pellucidum and its associated variants has to be relatively huge to cause functional psychosis. This is in contrast to the case of Mr RS which is relatively smaller than the size described in the aforementioned study [6].

Similar this report is a case reported by Achalia R in an 80 year old lady presenting with Schizophrenia-like psychosis [4]. Scans also revealed isolated CV instead of both CV and CSP presenting together. The patient in the report mentioned also responded to Quetiapine, albeit at a higher dose. Isolated CV has been described in relation to psychosis; for example, Wolf et al. reported two cases of isolated CV associated with treatment refractory schizophrenic illness [2].

The other is that CSP and CV increase the risk of major mental illness across the lifespan of the individual. Late onset, as sometimes reported, may be secondary to neurodegenerative changes occurring on an already vulnerable brain. These possibilities can be explored through MRI studies in late onset psychosis patients and matched healthy controls [5]. The presence of isolated CV may, therefore, indicate that midline neurodevelopment in early life did not occur in the expected sequence, or that there was a failure of development of isolated midline structures.

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