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Partial Empty Sella and Psychiatric Illness - Casual or Correlated? A Case Series

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Abstract: ***The condition known as empty sella syndrome (ESS) occurs when pituitary gland is shrunk or flattens. The pituitary gland is contained in sella turcica, an area at the skull base. When this gland is shrunk or flattens it is not visible on the Magnetic Resonance Imaging (MRI) appearing like an empty sella. Partial empty sella is when part of the gland is seen on the MRI. It is usually asymptomatic and mostly is an incidental finding. When symptomatic, it manifests with endocrine abnormalities, headache and psychiatric manifestations. Not much is known about the neurobiology of psychiatric disorders. Studies have mentioned that ESS and psychiatric disorders could be from the same genetic origin. In this case series we present three patients with partial empty sella turcica who presented with psychiatric illnesses, among these two had Psychosis and one Anxiety disorder.***

Keywords: Empty Sella Syndrome, Psychiatric illness, Schizophrenia.

1. Introduction

Empty sella turcica is a radiographic abnormality that is frequently dismissed as a coincidental finding with no clinical implications. [1] It's possible that an empty sella turcica exists. Primary, resulting due to lack of diaphragm sellae development, or secondary, resulting from partial or full damage of pituitary gland due to causes such as ischemia or infarction, hemorrhage, tumors, surgeries or radiotherapy. [1], [2] The symptoms of Primary Empty Sella Syndrome (PESS) can range from headache (mild to chronic), neurological symptoms like giddiness, syncopal attacks, cranial nerve related abnormalities and seizures; ophthalmic symptoms such as blurred or double vision, defects of visual field and visual loss; CSF rhinorrhea, endocrinal manifestations because of pituitary hypo functioning; Anxiety, Depression, psychosis, and schizophrenia spectrum disorders are examples of psychiatric manifestations. . [1], [2], [3], [4] This case series looks into the correlation between PESS and psychiatric illness hence providing the neurobiological insight of schizophrenia.

Case Presentation 1

A 52 years female, separated after 3 years of marriage, currently unemployed, educated upto PUC (plus two), premorbidly well-functioning with no family / past history of significant psychiatric illness and no history of substance use, presented to our psychiatry OPD along with her daughter, against her will, 10 days after disorganized behavior. Her daughter reported that she suddenly saw her speaking to herself telling some devil has come into her body and possessed her. Also she was having decreased sleep only for 2 hours. She presented with hearing voices of and seeing three devils who were visible on the wall or floor and commanded her when to eat and when to have bath. She also believed that someone has put CCTV camera inside her home and bathroom and that was being displayed on TV and phone and because of which she took bath wearing clothes. She could also see the things happening in Kerala, her daughter being arrested by police and devils trying to take her property despite she being in Bangalore. This impacted her daily activities and socio occupational functioning. On mental status examination she was moderately built, well kempt and groomed, conscious and oriented with poor eye contact, decreased psychomotor activity and talk, Irritable mood, restricted affect, described second person auditory and visual hallucinations of hearing and seeing devils, No formal thought disorder, persecutory delusion, maintained attention, concentration, and immediate memory with no insight. Ophthalmology investigation revealed refraction errors and no fundus abnormalities. Neurology opinion taken but no active intervention advised. Her investigations revealed low hemoglobin 9 gm. %, other investigations were under normal limits. Magnetic resonance imaging scan of brain revealed a partial empty sella.

Diagnosis: F23.11 Acute Polymorphic Psychotic disorder with symptoms of Schizophrenia. [ICD-10]
Rating scale used BPRS (Brief Psychiatric Rating Scale)

Treatment: Patient was treated with olanzapine 10 mg BD with Trihexyphenidyl 2mg resulting improvement of the symptoms, and currently she is maintaining well on 10mg Olanzapine and 2mg Trihexyphenidyl, with significant decrease in the BPRS scores.

Case Presentation-2

A 62 year old female, widowed 3years ago, retired teacher studied upto PUC (plus 2), premorbidly well-functioning with no family history significance and with past history of significant psychiatric illness of symptoms suggestive of mixed anxiety and depression after her husband demise, she has been treated with Amitriptyline 12.5mg and tab Clordiazepoxide 5mg, off medications since six months and a known case of systemic hypertension since ten years on medication, and no history of substance use, presented to our psychiatry OPD with her son with complaints of headache in tensed situations more during the mornings, decreased sleep mainly difficulty in maintaining sleep since 3 months.

On MSE anxious mood and affect with no significant thought abnormalities except some worries about the future, no perceptual abnormalities and intact insight. All

investigations including CBC, RBS, RFT, TFT & LFT within normal limits. MRI revealed a partial empty sella. Ophthalmology opinion was taken, refractory errors found with a normal fundus.

Diagnosis: F41.9 Anxiety Disorder, unspecified [ICD-10]

Treatment: Patient was treated with Paroxetine 25 mg OD and Clonazepam 0.5mg resulting in improvement of the symptoms, currently she is apparently doing well on Paroxetine.

Case Presentation-3

A 41 year old female, educated upto PUC (plus two), farmer by occupation, married having two children, with no family history significance, with past history of psychiatric illness since three years diagnosed as psychosis NOS (F.29) was on Risperidone 1mg, presented with seizures and hyponatremia, and psychiatric consultation was sought for hyponatremia ? Risperidone induced, in view of which Risperidone was stopped and Aripiprazole 5mg BD started due to symptoms of auditory hallucinations and delusion of reference and persecution. And MRI was sought to rule out cause of hyponatremia which revealed a partial empty sella. Other investigations showed a constant low sodium and deranged thyroid function test suggestive of low T3, T4 syndrome.

Rating scale used BPRS

Diagnosis: F29.0 Psychosis, unspecified [ICD-10]

Patient responded well to antiseizure medications and thyroid medications and is maintaining well on 5mg of Aripiprazole with a decrease in BPRS score.

2. Discussion

As we progress through 21st century, we get increasingly more eager to comprehend the neuroscience underpinning psychiatric illnesses, [5] having accessibility to cutting-edge medical technology like CT and MRI. Although historically no much evidence was found to prove any link between psychiatric illnesses and Empty Sella syndrome. Here we are reporting three cases with psychiatric illness and partial empty sella, out of the three two were diagnosed as psychosis and one as anxiety disorder, in all the three partial emtptysella was an incidental finding imaging (MRI-brain), which was done to rule out organicity. And similar case reports like us have been reported by others also. There was a documented case of a pair of monozygotic triplets with schizophrenia and ESS, indicating a possible link between the two. [6], [7] The triplets who presented with similar psychopathology at a later age of around 20 years had empty sella turcica on MRI, and also other similar abnormalities, indicating a genetic origin which is common to Empty sella syndrome and schizophrenia.

Schizophrenia is the commonest psychiatric disorder, and patients with this disorder present with varying symptoms. [8] The heritability of schizophrenia is significant, but the etiopathogenesis is poorly understood. [6] In a study done previously three case reports were presented with diagnosis of psychiatric disorders like unspecified psychosis, Postpartum psychosis and unspecified neurodevelopmental disorder, social anxiety disorder, OCD (obsessive compulsive disorder). [9] In another study titled 'Empty sella' on routine MRI studies: An incidental finding or otherwise? A substantial link was also discovered between psychiatric problems and ES, with cases of psychiatric disorders in the research group accounting for roughly 4.6 percent of the whole population, compared to only 1.3 percent in the general population. [10] The psychiatric disorders, found in study group, were schizophrenia (three), behavioral disturbances (four), depression (two), delusion disorder (one) and bipolar disorder (one). [10] Empty sella need not always be an accidental observation on MR imaging Some clinical conditions like hormonal disturbances, psychiatric disorders, raised ICT (intra cranial tension) have were associated with empty sella in comparision with general population.

Rare examples like this might aid our understanding of the neurobiology of psychiatric diseases and schizophrenia.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil

4. Conflicts of interest

There are no conflicts of interest.

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