Education-Family Physician Corner

Approach to an Early Onset Psychosis

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We present a case of an 11-year-old boy with a history of acute early onset psychosis and Autism Spectrum Disorder (ASD) since early childhood. He showed good response on risperidone 6 mg daily. Non-pharmacological treatment modality was implemented to this patient including behavioral modification programs, to ensure optimum outcomes to management.

Psychosis secondary to autism is challenging to diagnose compared to psychosis secondary to other mental illnesses, such as affective disorders or psychotic features associated with childhood onset schizophrenia. Variable presentations in such cases occasionally are highly intermingled.

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Childhood-onset psychosis is a diagnostic dilemma to both pediatricians and child psychiatrists. A study revealed that children who had early autistic traits such as social and communication problems, and restricted, repetitive interests and behaviors are more prone to develop psychotic experiences[1].

Another study reported that the possible link is not necessarily comorbid association, but rather a diagnostic manifestation of autistic features; 71% of schizophrenic adults show autistic features[2]. Another study showed that the association is merely attributed to chance; only 0.6% of patients with autism develop schizophrenia[3].

The concept of Autism was coined by Bleuler[4,5]. Recent studies support the hypothesis that psychotic spectrum and autism spectrum are absolute disorders of the social brain. Autism spectrum and psychotic spectrum are opposing phenotypes in terms of placentation, growth, neuroanatomy, neurological function and cognition[6]. A study found that patients with ASD (with or without psychosis) had less grey matter bilaterally in the temporal lobes and the cerebellum. Patients with psychosis were also found to have marked reduction in grey matter in the frontal and occipital regions. Neurodevelopmental abnormalities in ASD lead to a common pathway to psychosis[7].

Other studies suggest a different ASD profile in autism and psychosis. Autism with psychosis is difficult to diagnose; ASD could be misdiagnosed as schizophrenia[8].

The aim of this report is to present a case of an 11-year-old who presented with a history of acute early onset psychosis and ASD features since early childhood.

THE CASE

An 11-year-old boy presented with history of psychotic features for almost 4 months. The patient had gradually deteriorated; it started with loss of appetite, being less active, refusing to eat and not interested in daily activities.

Family members found him to be fearful, crying with no reason, spending a lot of time in the restroom, excessively washing his hands with no obvious reasons and isolating himself. Furthermore, he was noted several times to talk to himself in a low tone as if he was conversing with another along with explanatory hand gestures. He informed his mother that there are people coming after him who want to harm him or that there was something crawling on his limbs. He was also a victim of ongoing bullying since he was in the 1st grade. He was called names and physically beaten by his school mates.

Physical examinations and investigations were within normal. Immunology, serology profiles, and viral antibodies showed positive EBNA IgG, negative EBV IgG to Capsid antigen, and negative EBV IgM antibodies. MR imaging of the brain with pre- and post- contrast revealed no abnormality. The brain parenchyma was normal in morphology and signal intensity. The brain stem, cerebellum, basal ganglia, thalami and corpus callosum appeared normal. No structural brain anomaly was seen, pituitary gland showed normal signal intensity. Lumbar puncture was not done as the father did not give consent.

The patient had several autistic features since he was 3 years old. The autistic features were recorded in videos by his mother when he was 3-5 years old. Paternal aunt has a psychotic disorder. Maternal grandmother has a history suggestive of obsessional behavior and usually has symmetrical rituals.

The parents were not relatives. He was a product of full-term normal vaginal delivery (FTNVD), with no motor developmental delays. He started to use single words when he was 2-years-old and 2-word phrases when he was 2-and-a-half. His autistic behavior included: limited emotional expression, did not easily respond to his name, repetitive movements and abnormal posturing, peripheral gaze, and limited imaginative play. At school, he had learning difficulties but it was not as evident as after his mental deterioration.

Examination revealed a not fully cooperative boy with poor eye contact, peripheral gaze, looking dazed and occupied; his

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talk was irrelevant at times, with low tone and volume as well as limited speech.

The impression was viral encephalitis versus autoimmune encephalitis, yet all his physical examinations, investigations, and imaging were normal; therefore, organic causes were excluded. The first differential was Autism Spectrum Disorder with Psychosis, as the patient had clear positive symptoms, auditory, visual and occasional tactile hallucinations, along with persecutory delusions that lasted 4 months.

Obsessive Compulsive Disorder (OCD) with psychosis was also suspected, as the patient exhibited increased washing rituals with no specific reason, and given the fact that he has OCD in the family history. Other differentials would be psychosis due to affective disorders, mania or severe depression; however, the patient had no clear affective component in his presentation.

The patient was treated with oral antipsychotic risperidone 0.5 mg twice daily which was then increased to 1 mg at bedtime. Slight improvement was noted with no major side-effect; therefore, the dose was increased to 3 mg. After approximately one month, he showed some improvement; he was brighter, but still was seen on and off to be preoccupied and fearful.

After treatment, he had more interactions with the staff, had no hallucinatory behavior, but was still found to be dazed and preoccupied at times. The dose was increased to 5 mg and after 2 months increased to 6 mg. He showed good response to risperidone 6 mg daily.

When the symptoms subsided after 2 months, Stanford-Binet intelligence scales (fifth edition) was administered. He obtained verbal IQ of 73, non-verbal IQ of 81 and a full scale of 78, scoring better than 7% of the children of his age on the full scale and found to be within the level of borderline delayed.

The patient was diagnosed with Autism Spectrum Disorder with Psychosis. Adequate observation, needed investigations, psychometric testing, parental psychoeducation, and behavioral modifications along with pharmacological treatment were offered upon discharge.

DISCUSSION

Our case is similar to studies supporting that childhood autistic traits or ASD is an association to later onset psychotic experiences, especially in those with speech problems, odd rituals, or unusual habits[1]. However, we could not exclude the comorbidity of ASD and psychosis[3].

Approximately 75% of schizophrenia in childhood have an insidious course with pre-morbid problems that contribute to diagnosis delay and usually have less childhood delusions[9]. In our case, the patient had a fixed false belief about monsters, the course of his illness was more insidious than acute.

Negative symptoms of schizophrenia might be mistaken or masked by social communication impairment in ASD. Autistic features are a common manifestation in individuals with schizophrenia. However, there is a need to differentiate between negative symptoms of schizophrenia compared to deficits of socialization in ASD before 11 years[2].

Higher comorbidity of ASD and schizophrenia were more common in males, younger age groups along with higher motor-side effects to antipsychotics[10]. Our patient had clear comorbidity, as he met both criteria of early-onset schizophrenia and ASD, respectively. DSM-5 of ASD entails 6 months' duration of symptoms with exclusion of organic causes[11]. It is defined by social communication impairment and restricted, repetitive patterns of behavior. To diagnose schizophrenia, the following are required: hallucinations, delusions, disorganized speech, grossly disorganized or catatonic behavior, and/or negative symptoms[11].

Atypical antipsychotics such as clozapine, risperidone, olanzapine, quetiapine, ziprasidone, and aripiprazole were proven in clinical trials to be an emerging first-line pharmacological treatment for children with autism[12]. Similarly, the usage of atypical antipsychotics in early-onset schizophrenia became a first-line modality, due to the low risk of developing extrapyramidal symptoms and tardive dyskinesia. However, studies emphasize on long-term side-effects, such as weight gain[13]. Non-pharmacological treatment modality was implemented to this patient including behavioral modification programs, to ensure optimum outcomes to management.

CONCLUSION

The marked limitations of clinical trials in such cases is due to the rarity of such presentations and the ethical issues that arise when studying minors. Every case should be approached in a tailored manner as individual variations are unique in every case. There is a wide horizon for future studies to enhance our understanding of different etiologies, genetic involvements, pharmacological advances and management modalities in ASD with co-morbid schizophrenia in childhood.

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