CASE REPORT

An Adolescent with Incapacitating Tics

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Abstract

Introduction: Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS), also known as a pediatric acute-onset neuropsychiatric syndrome (PANS), are the sudden development of mainly obsessive–compulsive disorder (OCD) symptoms, tics, or other symptoms among children and adolescents.

Case description: This case is about a male of age 15 years with a history of fever 3 years back, after which symptoms such as abnormal sounds and body movements gradually started, which were involuntary. After many trials with different antipsychotics, the patient started responding but symptoms persist along with anxiety and irritability at times.

Conclusion: Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections occur in about 1 in 1,000 children, which is a rare disorder and is difficult to diagnose. The treatment is challenging as a suitable antipsychotic has to be picked in terms of efficacy and dosing.

Keywords: Brain imaging, Obsessive–compulsive disorder, Pediatric autoimmune neuropsychiatric disorder is associated with streptococcal infections, Streptococcal infection, Sudden onset.

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Introduction

Pediatric autoimmune neuropsychiatric disorder associated with streptococcal infections, also known as a PANS is a sudden development of OCD symptoms or tics among children or adolescents. Other than OCD symptoms or tics various other symptoms like severe anxiety, panic attacks, irritability, abnormal eating behavior, trouble eating, reading, and writing, or at times suicidal thoughts may occur.[1] Several reports of early onset OCD and Tourette's syndrome point to the etiopathogenesis' autoimmune mechanism.[2] The main emphasis is on the temporal association of the infection and the beginning of symptoms to consider it under the PANDAS group. Swedo et al. stated that seropositivity was associated with symptom exacerbation similarly falling titers in these patients were followed by symptom remission as well.[1]

Though beta-hemolytic streptococcal infection is common in India, not many cases of PANDAS have been reported earlier. We report a case of tic disorder in a young adult that fulfills the PANDAS subgroup's criteria.

Case Description

A young male, 15 years of age, was brought involuntarily to the psychiatry outpatient department OPD due to sudden stiffness of the whole body with torticollis lasting for almost 3–4 hours. On detailed history evaluation, we got a history of fever 3 years back, which was moderate in nature and associated with cough and severe weakness lasting for 4 days for which he was treated by a local doctor and was cured by taking medications. Also, 1 month after recovering from the fever, he started developing repeated involuntary grunting sounds followed by shoulder shrugging, hand twitching, and eye blinking. All his symptoms started to increase gradually and mainly they aggravate while doing skilled work (such as writing, cutting vegetables, or holding a mobile phone). Due to all these symptoms, despite having good intelligence, he had to drop out of his studies in class 8. However, surprisingly, these symptoms were completely absent during sleep. He visited multiple physicians but without any improvement. His symptoms were gradually increasing day by day affecting his daily life significantly. Furthermore, 2 years later, he developed a sudden stiffness of the whole body with torticollis which lasted for 3–4 hours for which he was brought to the OPD. There was no history of previous such illness and no family history of any psychiatric illness. The patient was examined thoroughly and ruling out the major probability of organicity the patient was admitted. Initially, the patient was started with injectable benzodiazepine and later was tried with oral antipsychotics such as haloperidol and quetiapine but showed minimal improvement. During this period, all his necessary investigations were done, and all his reports were within normal limits apart from his antistreptolysin O (ASO) titer, which came to be 400 IU/mL (raised), with normal findings in the echocardiography and magnetic resonance imaging (MRI) brain imaging also. Later on, he started with syrup risperidone 24 drops and a tablet of clonazepam 1 mg both in two divided doses. In this dosage, he started to show much improvement and was advised to discharge and to properly follow up. On regular follow-up and medications, he showed above 60% improvement till now, his mental state examination (MSE) revealed an anxious mood and effect by worries about his illness

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Table 1: Criteria for the diagnosis of pediatric PANDAS[5]

S.No.	*Criteria for pediatric PANDAS diagnosis*
1.	Presence of a tic disorder, OCD, or both, as per criteria established in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV)
2.	Prepubertal onset of neuropsychiatric symptoms
3.	History of sudden onset of symptoms, episodic course with abrupt symptoms exacerbation interspersed with the period of partial or complete remission, or both
4.	Evidence of temporal association between onset of neuropsychiatric symptoms and infection with group A β-hemolytic streptococci (GABHS)
5.	Adventitious movement (e.g., motor hyperactivity and choreiform movement) may be present during symptom exacerbation

and sudden irritability at times, and thus along with previous treatment he was also started with tablet sertraline 50 mg in the morning and continued maintaining well.

Discussion

After a streptococcal infection, antibodies are formed against the bacterial antigen and those antibodies show cross-reactivity toward the basal ganglia and hamper its normal activity leading to OCD and/or tics.[3] Although it happens rarely, there is evidence of the occurrence of OCD in adults following a sore throat.[4] There is also evidence of the role of immunomodulator therapy particularly in this subgroup of OCD. In this case report, the patient fulfills the criteria of PANDAS as mentioned in Table 1.[5] Brain imaging shows the occurrence of different neuropsychiatric symptoms with different affected areas (e.g., patients having inflammatory changes in the amygdala show emotional dysregulation, similarly those affecting the basal ganglia show OCD symptoms or motor dysregulation). It has been also stated that in chronic cases brain imaging may come normal due to the self-limiting inflammatory process.[6] Similarly, in this case, the patient came to us with a 2-year prior history of infection; thus, our finding of the brain imaging came to be normal.

Conclusion

Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections occur in about 1 in 1,000 children, it is a rare disorder and is difficult to diagnose.[7] History of fever has to be evaluated properly as most of the time it gets unnoticed. The treatment is challenging as a suitable antipsychotic has to be picked in terms of efficacy and dosing.

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