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# Pediatric Autoimmune Neuropsychiatric Disorders associated with Streptococcal Infections (PANDAS): A Case Report

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**Abstract**

PANDAS is a pediatric autoimmune neuropsychiatric disorder due to streptococcal infection. We report here a case of 9 years old male child from Kashmir are presenting to us with an acute onset of repetitive behaviour in the form of washing of hands following a febrile illness, sore throat few months back. Diagnosis of PANDAS was made and treatment was started.

**Keywords:** Pediatric Autoimmune Neuropsychiatric Disorders associated with Streptococcal, Group A Streptococcal, Anti-Streptolysin O, Obsessive and Compulsive Disorder

**Abbreviations:** PANDAS, OCD, GABHS, ASO

## Introduction

A rare pediatric neuropsychiatric disorder linked to Group A Streptococcal Infection (GAS) is Pediatric Autoimmune Neuropsychiatric Disorders associated with Streptococcal Infections (PANDAS). PANDAS has been associated with childhood-onset tic disorder and OCD [1]. To diagnose the PANDAS following criteria should be fulfilled. Child should have presence of obsessive and compulsive disorder, prepubertal (between 2-12 years usually) exacerbations of symptoms, course of symptoms may be acute and episodic in nature, association of symptoms with Group A B-Hemolytic Streptococcal (GABHS). Infection and neurological abnormalities during periods of symptom exacerbation [2]. So, it is important to be aware of the disorder in order to prevent severely debilitating course of illness [3].

## Case Report

A 9 year-old boy hailing from Kashmir India, accompanied by his mother presented to the psychiatric out-patient department, with history of repeated washing of hands along with a sudden onset of motor tics since 1 year. Initially patient developed fever, productive cough, and breathlessness and the diagnosis of respiratory tract infection was made by the treating pediatrician of which no records are available and after the treatment, his general condition improved. After two months following his recovery from lower respiratory tract infection patient started having severe irritability with repeated hand washing. Then after sometime patient had improvement in fever but irritability and repeated washing of hands increased and in addition to that, patient has started having some complex movements, which includes head jerking & shoulder shrugging.

Movements were always present during the day but were absent during sleep. From the past 3 months these symptoms had been persistent which caused impairment in his social functioning. The worsened condition perturbed the patient as well as his family and he was taken for multiple consultations, even the spiritual help had been sought but there was no improvement in his condition. Then patient was then referred to psychiatric Out-Patient Department (OPD). Developmental history revealed that child was a product of a non-consanguineous marriage, full-term and born after an uncomplicated pregnancy by normal delivery at hospital. Child received routine immunization as per schedule. Detailed history and psychiatric evaluation revealed normal developmental milestones. Past medical history suggested recurrent throat infections. There was no significant family history of neurological or psychiatric disorders. On examination, child was conscious, oriented with normal higher mental functions. The patient was investigated before beginning the treatment, Electro Encephalo Graphy (EEG) and Magnetic Resonance Imaging (MRI) brain were normal. Baseline investigations were carried out such as Complete blood count, erythrocyte sedimentation rate, blood sugar, electrolytes levels, liver function tests & thyroid function tests which were found to be within normal limits. In view of recent past history of recurrent throat infections Anti-Streptolysin O (ASO) titers were estimated which were found to be high. Initially it was 443 Todd units then raised to 931 Todd Units (Normal value: 170-330 Todd units). Cardiology consultation was also sought to rule out any cardiac illness. The diagnosis of PANDAS was made as our case fulfilled all the required diagnostic criteria. Then, the treatment was started. Patient was put on fluoxetine 20 mg/day and tab clonidine 0.1 µg ¼ bid. Patient showed significant improvement in motor tics after 3 weeks while as his obsessive and compulsive symptoms improved 2-3 months after the starting of treatment. On follow up the patient has shown further improvement.

## Discussion and Conclusion

Pediatric Auto-immune Neuropsychiatric Disorders Associated with Streptococcal infection is rare condition as only few cases have been reported in literature [3,4]. The case reported by us is probably the first case reported of PANDAS from this part of India. To diagnose a case of PANDAS the patients must fulfil the diagnostic criteria, a positive throat culture for GABHS, and or elevated antibody titers (ASO). It is also important to keep in mind that in some cases even months after infection, the cultures might be negative by the time

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patient presents to the clinician [2] when a child with sudden onset or exacerbation of Obsessive And Compulsive Disorder (OCD) or present with tics after a recent streptococcal infection, the clinician should keep Pediatric Auto-immune Neuropsychiatric Disorders Associated with Streptococcal infection in differentials [1, 2].

The case presented above showed the association of the onset of the symptoms being preceded by throat infection as well as increase in ASO titer. The patient in our case had obsessions, compulsions, complex motor and tics as comorbid conditions. The symptoms are usually exacerbated by GABHS infection. Comorbid conditions like cognitive deficits, separation anxiety etc. are reported in some cases of PANDAS [5]. The possible cause of PANDAS includes an autoimmune antibody or a streptococcal toxin [5].

We reported this case as this condition is very rare in our region. So, it is important to create awareness among specialists like pediatricians as well as psychiatrists to keep this disorder in mind when treating children who has recurrent respiratory tract infection associated with psychiatric symptoms like OCD or complex motor disorder. Hence a timely intervention can be helpful which enhances social life of children.

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## Conflict of Interest

None

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