

# PANDAS in an Adult?: A Case Report

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## ABSTRACT

**Introduction:** A spectrum of neurobehavioral disorder that includes obsessive-compulsive disorder (OCD) occurs in association with streptococcal infection is called as pediatric autoimmune neuropsychiatric disorder associated with streptococcal infection (PANDAS).<sup>1</sup> Role of autoimmune mechanism in the etiology of OCD and Tourette's syndrome in the patient subgroup with early onset has been reported in several reports.<sup>2</sup> The temporal association between neuropsychiatric symptom exacerbations and streptococcal infections was the major distinguishing feature of the PANDAS subgroup.

**Case:** A 22-year-old male, presented to the psychiatric outpatient department (OPD) with complaints of recurrent thoughts and images of dirt present on a holy book with compulsive action of cleaning the holy book repeatedly in order to relieve anxiety. Around 4 days prior to these complaints, the patient had an episode of high-grade fever associated with chills, sore throat, cough, and cold. In view of the early onset of obsessive symptoms with sudden exacerbations, and the past history of streptococcal throat infection, the possibility of PANDAS was considered. Yale-Brown obsessive compulsive disorder rating scale revealed a score of 26. He was examined by a physician, advised blood investigations, and was started on antibiotic, antipyretic along with cough syrup and antacid. We started him on tablet clonazepam 0.5 mg HS and SOS to reduce the anxiety-related symptoms associated with his presenting complaints. On examination, the patient was very fidgety and would keep crossing-uncrossing his legs; otherwise, his systemic examination was unremarkable. Hemoglobin (13.5 g/dL), TLC (5700/mm<sup>3</sup>), and ESR (05 mm in the first hour), blood sugars, renal function test (RFT), and liver function test (LFT) were within normal limits. In view of recent past history of sore throat, antistreptolysin O (ASO) titers were advised and found to be high (>200 Todd units). He followed up after 7 days with complete remission. When the patient was followed up at 12 months and 18 months, he did not had any such episode.

**Discussion:** The coexistence of streptococcal infection and repetitive thoughts leads to the concept that there can be an autoimmune reaction—a cross-reaction between streptococcal and brain antigen. It has been suggested that in OCD following an infection, the antibodies to the bacteria may make their way to the healthy brain and attack the basal ganglia, which disrupts normal brain activity and triggers OCD. We report a case in order to suggest that we should be alert while assessing OCD in young patients, as it might be secondary to streptococcal infection. This has therapeutic implications. Trials of immunomodulator therapy can be given as suggested in a few kinds of literature. Although still experimental, it may have potential for the future, especially in those not responding to conventional treatment.

**Conclusion:** This report might suggest that PANDAS-like syndrome may occur in adults also. We should be cautious of this syndrome during treatment.

**Keywords:** Anxiety, Compulsive behavior, Obsessive-compulsive disorder, Reading, Young adult.

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## INTRODUCTION

A range of neurobehavioral disorder that includes obsessive-compulsive disorder (OCD) occurs in association with streptococcal infection is called as paediatric autoimmune neuropsychiatric disorder associated with streptococcal infection (PANDAS).<sup>1</sup>

Several reports on OCD and Tourette's syndrome in the patients with early onset suggest autoimmune mechanism in the aetio-pathogenesis.<sup>2</sup> There has to be a temporal association between evidence of streptococcal infections and neuropsychiatric symptom exacerbations to fall under PANDAS subgroup. There is emphasis on temporal association because in school-going children, throat cultures may come positive in as high as 20% of students as they are "strep carriers" (positive throat culture, but no serologic evidence of infection). Swedo et al. also noted that while seropositivity was associated with symptom exacerbations in PANDAS subgroup, the falling titers in these patients were followed by symptom remission as well.<sup>1</sup>

Although  $\beta$ -hemolytic streptococcal infection is prevalent in India, not many cases on PANDAs have been reported earlier. We report a case of OCD in a young adult that broadly fulfilled the criteria PANDAS subgroup and showed symptom resolution on effective treatment of the streptococcal infection.

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## CASE DESCRIPTION

A 22-year-old, Hindi-speaking, unmarried, male, educated up to 12th standard presented to the psychiatric OPD with complaints of recurrent thoughts and images of dirt present on a holy book for 10 days, which were intrusive, irresistible, and associated with intense guilt. He would then keep cleaning the holy book repeatedly in order to relieve anxiety. This would make him very restless, and he would start reciting verses from the holy book; however,

**Table 1:** Criteria for the diagnosis of pediatric autoimmune neuropsychiatric disorder (PANDAS)

1	Presence of a tic disorder, OCD, or both, as per criteria established in the 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 $\beta$ -hemolytic streptococci (GABHS)
5	Adventitious movement (e.g., motor hyperactivity and choreiform movement) may be present during symptom exacerbation

there would be only minimal relief after which he would again start having these thoughts and images. Around 4 days prior to these complaints, the patient had an episode of high-grade fever associated with chills, sore throat, cough, and cold. There was a family history of obsessive–compulsive personality traits in his mother. He gave a history of frequent sore throat associated with fever and cough, since childhood for which he has taken treatment from physician; however, details about the treatment taken were not available.

No past, family, and personal history were observed.

In view of the early onset of obsessive symptoms with sudden exacerbations, and a history of streptococcal throat infection, the possibility of PANDAS was considered (Table 1). Yale–Brown obsessive compulsive disorder rating scale revealed a score of 26. He was examined by a physician, advised blood investigations, and was started on antibiotic tablet azithromycin 500 mg OD, tablet paracetamol 500 mg, and tablet cetirizine 10 mg HS along with cough syrup and antacid. We started him on tablet clonazepam 0.5 mg HS and SOS to reduce the anxiety-related symptoms associated with his presenting complaints. He was advised to follow up with reports.

On examination, the patient was very fidgety and would keep crossing-uncrossing his legs; otherwise, his systemic examination was unremarkable. Hemoglobin (13.5 g/dL), TLC (5700/mm<sup>3</sup>), and ESR (05 mm in the first hour), blood sugars, RFT, and LFT were within normal limits. In view of recent past history of sore throat, antistreptolysin O (ASO) titers were advised and found to be high (>200 Todd units). He followed up after 7 days with complete remission of symptoms. When the patient was followed up at 12 months and 18 months, he did not have any such episode.

## DISCUSSION

After a streptococcal infection, the antibodies against the bacterial antigen may show cross-reactivity and erroneously attack the basal ganglia, which alters the normal brain activity and triggers OCD.<sup>3</sup> This cross-reaction between streptococcal and brain antigen was also demonstrated by Husby et al.<sup>4</sup> Our case further highlights the need to be aware of the autoimmune mechanism behind OCD symptoms in not only children but also young adults in the period following streptococcal infection.

Our patient fulfilled all of Swedo's working criteria for the diagnosis of PANDAS except prepubertal onset.<sup>1</sup> There is evidence that PANDAS can have its onset in adulthood, but rare. Bodner et al. had also reported a case of a 25-year-old man who developed OCD immediately after a sore throat and suggested that the PANDAS syndrome may arise in adulthood.<sup>5</sup> This has therapeutic implications as there could be a role of immunomodulator therapy in this subgroup of OCD as has been suggested in a few kinds of literature. Although still experimental, it holds potential, especially in those not responding to conventional treatment, and warrants more extensive and systematic research.

## CONCLUSION

This report suggests that PANDAS-like syndrome may occur in adults as well and this should be taken into consideration during investigations and management.

## Ethical Consideration

Informed consent was obtained from the subject, and ethical procedures were followed.

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