

Sudden Onset Obsessive–Compulsive Symptoms Following Streptococcal Infection (PANDAS) in a Child: A Case Report

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Abstract

Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) is a condition characterized by the sudden onset of obsessive–compulsive symptoms and other neuropsychiatric manifestations following group A streptococcal infection. This case report describes a 9-year-old girl who presented with anxiety and symptoms of obsessive–compulsive disorder (OCD) that developed following a severe streptococcal infection. The patient experienced intrusive sexual thoughts involving fears that her mother might engage in sexual activity with her brother. Additional obsessions included beliefs that boys in her class were “dirty,” which led to avoidance behaviors. These intrusive thoughts caused significant distress and were accompanied by compulsive behaviors including blinking three times repeatedly, reciting religious verses, tapping three times on her knees, and blowing on herself to neutralize anxiety. The child also avoided touching classroom furniture and frequently texted her mother from school reporting distress related to her intrusive thoughts. According to parental reports, the patient had been functioning normally prior to the onset of symptoms approximately one year earlier when she developed a high fever and was hospitalized for three days due to a streptococcal infection. During the same period, a visiting cousin introduced sex education topics unfamiliar to the child, which appeared to influence the content of her obsessions. The patient demonstrated good insight into her symptoms and expressed a strong desire to overcome them. Following three months of psychological therapy with parental involvement, significant improvement in symptoms was observed. This case highlights the complex interaction between biological triggers and psychosocial influences in pediatric OCD associated with PANDAS.

Keywords: PANDAS, Obsessive-Compulsive Disorder, Pediatric Anxiety, Streptococcal Infection, Cognitive Behavioral Therapy.

Introduction

Obsessive–Compulsive Disorder (OCD) is a psychiatric condition characterized by persistent intrusive thoughts (obsessions) and repetitive behaviors or mental acts (compulsions) performed to alleviate anxiety or prevent perceived harm. In children, OCD can significantly interfere with daily functioning, academic performance, and social relationships.

In some pediatric cases, OCD symptoms emerge abruptly following infectious illnesses, particularly group A beta-hemolytic streptococcal infections. This clinical presentation is described as Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) [1]. PANDAS is considered a subtype of Pediatric Acute-onset Neuropsychiatric Syndrome (PANS) [2].

The underlying mechanism is believed to involve an autoimmune response in which antibodies produced during infection mistakenly target neuronal structures, particularly the basal ganglia [2,3]. This immune response may disrupt neural circuits involved in

behavioral regulation and emotional processing, resulting in sudden onset of obsessive–compulsive behaviors, motor tics, anxiety, and other neuropsychiatric symptoms [4].

Recent research has further suggested that children with PANS/PANDAS may show increased vulnerability to autoimmune and inflammatory processes affecting neuropsychiatric functioning [5]. This case report describes a child with sudden onset OCD symptoms following a streptococcal infection and illustrates how biological factors and environmental experiences may interact to shape symptom presentation.

Case Presentation

M.A. was a 9-year-old girl who presented with symptoms of anxiety and obsessive–compulsive disorder. The patient reported recurrent intrusive thoughts involving fears that her mother might engage in sexual activity with her brother. These thoughts were distressing and unwanted and caused significant emotional discomfort.

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The patient also developed additional obsessive beliefs that boys in her class were “dirty.” Consequently, she refused to sit near male classmates and attempted to maintain physical distance from them in the classroom. Interestingly, this belief did not extend to her own brother, whom she did not perceive as “dirty.” These beliefs contributed to avoidance behaviors that interfered with her school functioning.

Furthermore, the patient experienced contamination-related fears associated with the school environment. She avoided touching classroom furniture, including desks and chairs, due to fears that they might be contaminated.

When experiencing distressing intrusive thoughts during school hours, the patient frequently texted her mother seeking reassurance and expressing discomfort with the thoughts she was experiencing. She demonstrated insight into her condition and was aware that the thoughts were unwanted. The patient expressed a clear desire to eliminate these thoughts and regain control over her behavior.

Several compulsive behaviors were observed as attempts to neutralize the anxiety caused by the obsessions. These compulsions included blinking exactly three times repeatedly, tapping three

times on her knees, reciting religious verses, and blowing on herself as a form of protective ritual.

According to parental reports, the patient had no previous psychiatric history and had been functioning normally prior to the onset of symptoms. Approximately one year before presentation, she developed a very high fever and was hospitalized for three days. During hospitalization, she was diagnosed with a streptococcal infection.

Following recovery, her parents began noticing behavioral changes including heightened anxiety, intrusive thoughts, and repetitive rituals.

Personal and Family History

M.A. was the eldest of three siblings, and her mother was expecting their fourth child at the time of presentation. She expressed excitement about the upcoming addition to the family. She came from a religious Muslim family where the concepts of good deeds and wrongdoing were strongly emphasized as part of her upbringing. M.A. was described as a gentle and friendly child who demonstrated a level of maturity beyond what is typically expected for her age. She also showed good insight into her condition, recognizing that her thoughts and behaviors were problematic, and she openly expressed a strong desire to recover from her symptoms.

Assessment

The Children’s Yale-Brown Obsessive–Compulsive Scale (CY-BOCS) was administered to evaluate the severity of obsessive–compulsive symptoms. The patient obtained a score of 8 on the obsessions subscale and 14 on the compulsions subscale, indicating clinically significant obsessive–compulsive symptoms consistent with OCD.

Additionally, the Spence Children’s Anxiety Scale (SCAS) was used to assess anxiety-related symptoms. The patient scored 17 on the OCD subscale and 12 on the Generalized Anxiety Disorder (GAD) subscale, suggesting elevated anxiety levels associated with obsessive–compulsive symptomatology.

Final Diagnosis

Obsessive Compulsive Disorder with present insight.

Discussion

This case illustrates several features consistent with Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS), particularly the sudden onset of obsessive–compulsive symptoms following a documented streptococcal infection [1].

One of the defining characteristics of PANDAS is the temporal relationship between group A streptococcal infections and the abrupt emergence or worsening of neuropsychiatric symptoms [1,6].

The pathophysiology of PANDAS is believed to involve molecular mimicry, in which antibodies generated against streptococcal bacteria cross-react with neuronal tissues in the basal ganglia [2,3]. Dysfunction in these brain regions may lead to disturbances in emotional regulation and behavioral control, contributing to obsessive thoughts and compulsive behaviors.

The patient in this case exhibited several symptom dimensions frequently observed in pediatric OCD, including intrusive sexual

thoughts, contamination fears, avoidance behaviors, and ritualistic compulsions.

Environmental factors appeared to influence the thematic content of the patient's obsessions. Exposure to unfamiliar discussions related to sexual education may have contributed to the emergence of intrusive sexual thoughts, which the patient experienced as distressing and unacceptable.

The patient's positive response to therapy highlights the effectiveness of cognitive-behavioral interventions in treating pediatric OCD. Cognitive Behavioral Therapy (CBT), particularly Exposure and Response Prevention (ERP), has strong empirical support as a first-line treatment for OCD in children [3].

Recent literature also highlights ongoing debate regarding the diagnostic boundaries and biological mechanisms of PANDAS, emphasizing the need for further research to better understand its clinical presentation and treatment approaches [7].

Conclusion

This case report describes a 9-year-old girl who developed obsessive-compulsive symptoms following a streptococcal infection consistent with PANDAS. The case highlights the complex interaction between biological triggers, environmental influences, and cognitive factors in the manifestation of OCD symptoms in children. The patient demonstrated insight into her symptoms and responded positively to psychological therapy with parental involvement. Increased awareness of PANDAS among clinicians may facilitate earlier identification and more effective management of affected children.

Conflict of Interest Statement

The author declares that there is no conflict of interest regarding the publication of this case report.

Ethical Considerations and Patient Consent

Informed consent for publication was obtained from the patient's parents. All identifying information has been anonymized to protect patient confidentiality.

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