Pediatric Autoimmune Neuropsychiatric Disorders Associated With Streptococcal Infections Manifestations in a Teenager

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Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS) was first postulated in 1998, and it describes children who develop sudden onset or exacerbation of obsessive-compulsive disorder (OCD) or tic disorder (TD) following an infection with group A streptococcus (GAS).[1] The diagnostic criteria consist of OCD or TD, prepubertal onset, episodic course, temporal association of GAS infection with symptoms, and neurologic abnormalities. Boys are affected twice as often as girls, starting around age 7 or 8 years, with separation anxiety, declining school performance, sleep and urinary disturbances, and sensory and motor abnormalities.[2]

Management of PANDAS includes (1) behavioral therapy or psychotropic drugs,[3] (2) immunomodulators in the presence of neuroinflammation or postinfectious autoimmunity,[4] and (3) antibiotics (including in patients with no evidence of GAS).[5]

Case Report

This is a case of an 18-year-old male patient with PANDAS resistant to most treatments recommended in the literature. The patient lives with his parents, was recently home schooled, and has a history of autoimmune encephalitis, OCD, and Tourette's disorder. He was admitted to an inpatient psychiatric unit for daily physical aggression toward his parents.

Pertinent elements of his history include acute onset of vocal/motor tics and ritualistic behaviors at age 14 years (Tourette's disorder, OCD). PANDAS syndrome was considered in the differential, and throughout the following years he was treated with antibiotics (benzyl penicillin and minocycline), multiple rounds of intravenous immunoglobulin treatment (IVIG) and plasmapheresis, antipsychotics (haloperidol, risperidone, olanzapine, and aripiprazole), mood stabilizers (valproate and lithium), antidepressants/anxiolytics (fluvoxamine, sertraline, lorazepam, propranolol, citalopram, fluoxetine, clomipramine, escitalopram, hydroxyzine), benztropine, adenotonsillectomy, individual psychotherapy, and partial hospitalization programs.

Over time, he showed personality changes (antisocial and narcissistic traits), hypersensitivity to light and sound, and declining ability to care for self. He experienced multiple relapses and developed an obsession/fear of developing skin cancer, causing him to no longer shower, as well as anxiety and intrusive thoughts about being ill that was relieved by hitting his parents, which escalated to the point that they wore helmets. His behavior was erratic, and he would run out in the streets naked and scream. He had over 20 emergency department visits and hospitalizations from 2018 to 2020. A multidisciplinary approach was always employed, including collaboration with his pediatrician and an outpatient psychiatric nurse practitioner.

Discussion

New cases of PANDAS are treated with a course of antibiotics. Mild cases receive symptom-targeted therapy, like selective serotonin reuptake inhibitors, cognitive-behavioral therapy, or exposure and response prevention. For moderate to severe cases, the recommendation is corticosteroids or IVIG. For extreme and life-threatening cases, therapeutic plasma exchange is the first-line therapy given either alone or in combination with IVIG, high-dose corticosteroids, rituximab, or adenotonsillectomy.[6,7] Other differential diagnoses include bipolar and major depressive disorder (mood lability, hopelessness, poor impulse control, somatic preoccupations of having skin cancer), attention-deficit/hyperactivity disorder, and autism spectrum disorder (difficulty focusing on certain topics while hyperfocusing on others, sporadic motoric hyperactivity).[8]

Difficulty in treating PANDAS, as well as its dramatic and unpredictable course, also places a heavy burden on caregivers, making them more susceptible to anxiety and burnout.[9] As providers, it was challenging treating the patient in the present case because while he was agitated at home, in the hospital he exhibited good behavioral control, potentially due to limited contact with his parents. He has undergone most recommended treatments but continues to exhibit aggressive behavior, poor self-care, and regression. Treatment and management of this patient poses a challenge, as there are no guidelines for treatment-resistant PANDAS.

While this is not a success story, our goal is to raise awareness and educate the community at large. In conclusion, we recommend that, in these cases, providers start antibiotics immediately; check levels of antibodies before, during, and after an episode; and consider pharmacotherapy for mood and behavioral symptoms.

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