A Case of Myoclonic Symptoms After Streptococcal Infection: Possible PANDAS Variant

Streptokok Enfeksiyonu Sonrasında Gelişen Myoklonik Belirtilerle Seyreden Bir Olgu Sunumu: Olası PANDAS Variyantı

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ABSTRACT
Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) is defined as exacerbation of obsessive-compulsive disorder and/or tic disorder after streptococcal infections. New accumulating evidence suggests that PANDAS have some variants such as infantile-onset type, adult-onset type, myoclonic type, and dystonic type. In this report, we present the case of a fifteen-year-old adolescent who had myoclonic symptoms in the shoulders and was first treated for epilepsy and later, for conversion disorder until the diagnosis of PANDAS was established. (Archives of Neuropsychiatry 2011; 48: 85-7)
Key words: PANDAS, myoclonus, late onset

ÖZET
PANDAS streptokoksik yangıdan sonra alevlenen obsesif kompulsif bozukluk ve/veya tik bozukluğu olarak tanımlanmaktadır. Yeni biriken kanıtlar PANDAS’ın, çocukluğa başlayan, erişkin başlangıçlı, myoklonik tipte ve distonik tipte gibi farklı alt klinik tablolarla ortaya çıkabileceğini bildirmektedir. Bu olgu sunumunda, PANDAS teflihi konulana kadar, önce epilepsi sonra konversiyon bozukluğuna yönelik tedavi alan, omuzlarda myoklonik semptomlar olan bir beş yaşındaki ergen hastadan bahsedilecektir. (Nöropsikiyatri Arşivi 2011; 48: 85-7)
Anahtar kelimeler: PANDAS, myoklonus, geç başlangıç

Introduction
Streptococcal infections are very common in childhood. Diseases attributed to streptococci are usually self-limited and only a small part of them result in neurological and/or psychiatric symptoms after infections (1). The most well-established among these is Sydenham’s chorea, which has been long suspected to have an autoimmune basis, specifically as a postinfectious complication to group A β-hemolytic streptococcal (GABHS) infection and rheumatic fever (RF) (2,3).

Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS) is a term coined by Swedo et al. to describe 50 patients with recurrent, acute fulminant exacerbations of tics or obsessive-compulsive symptoms that had a temporal association with GABHS infections. Swedo et al. have also formulated 5 criteria of PANDAS: presence of obsessive-compulsive disorder (OCD) and/or a tic disorder, pediatric onset, episodic course of symptom severity, association with GABHS infection, and neurological abnormalities (4). Accumulating evidence suggests that PANDAS has some variants such as infantile-onset type, adult-onset type, myoclonic type, and dystonic type. Pavone et al. also proposed some practical points for the diagnosis of PANDAS variant: exclusion of tics/OCD criterion, importance of GABHS infection and emphasis of the course of disease (5). In all of the above-mentioned disorders, the symptoms vary, but the etiology is almost the same. Autoimmune antibodies against basal ganglia represent a common pathway in susceptible persons. Genetic vulnerability seems to play an important role in disease expression (6).
In this report, we present the case of a fifteen-year-old adolescent who had myoclonic symptoms in the shoulders and was initially treated for epilepsy and later, for conversion disorder until the diagnosis of PANDAS was established.

Case

A fifteen-year-old male had been evaluated at the emergency department with complaints of nausea and involuntary movements of the shoulders a week after oropharyngeal infection and high temperature. These symptoms had been considered relevant to a diagnosis of encephalitis or an epileptic disorder. Because the cerebrospinal fluid (CSF) findings had been completely normal, encephalitis had been ruled out. Cranial MRI and Electroencephalographic (EEG) assessment were without any abnormalities. After initiating diazepam infusion, the symptom of myoclonus had been controlled, hence, the patient had been administered valproic acid at a dose of 500 mg per day for the diagnosis of myoclonic epilepsy and had been discharged after the disappearance of myoclonic seizures. Five days later, the myoclonus had reappeared, so the dose of valproic acid had been increased to 1000 mg per day, but with no response. In spite of adding clonazepam 2 mg/day to the existing pharmacotherapy, the myoclonus had persisted and showed periodic pattern.

The patient was admitted to our outpatient clinic six months after the onset of symptoms. Because there was no enough response to antiepileptic treatment and sometimes the symptoms were exacerbated by stressor factors, we requested a consultation by the neurology department regarding the possibility of conversion disorder. The last EEG assessment was completely normal and the patient was prescribed sertraline 50 mg per day for the diagnosis of conversion disorder. The patient has been followed up at the neurology and psychiatry departments for ten months exhibiting the same symptom severity.

At the final evaluation, it was found out that the symptoms initiated after a high temperature and oropharyngeal infection and also continued in an episodic pattern. Additionally, it was understood that myoclonic symptoms followed skin lesions determined to be pyogenic lesions. Skin swabs were taken for culture by a dermatologist and were positive for streptococcal infections, while the throat culture was negative.

Therefore, PANDAS myoclonic type has been suspected and determination of Antistreptolysin-O (ASO) titer was recommended. Because of the fact that the value of ASO was high (345 IU/ml), all psychiatric and neurological treatments were stopped and intramuscular (IM) penicillin treatment was suggested for five days. Moreover, considering the probability of acute RF, the rheumatology department was consulted, but this diagnosis was not confirmed due to absence of other symptoms of RF.

The myoclonus of the shoulders resolved completely with penicillin therapy. Two months later, ASO titer was measured again and was as high as the prior one. Thereupon, it was decided that continuing penicillin prophylaxis (1.200.000 IU / once every three weeks) was needed.

During the six-month follow-up period, the patient had no complaints and continued his life in a healthy manner.

Discussion

In this report, we note that it is hard to recognize the myoclonic variant of PANDAS in late-onset cases. According to the diagnostic criteria of PANDAS, the symptom onset must be between 3 years of age and puberty (7). The case presented here does not meet the PANDAS criteria, but as there are cases with even later onset, described as adult-onset variant of PANDAS, we suggest that late onset can not be an exceptional feature (8). Additionally, the sudden onset must be taken into consideration as a supporting detail.

In the literature, there are few reports involving no tics and obsessive-compulsive symptoms, but only myoclonus (9,10). Pavone et al. noted that existence of OCD/tic disorders may not be essential in PNADAS variant cases (5). The most common autoimmune neuropsychiatric disorders associated with streptococcal infections include Tourette’s syndrome, Sydenham's chorea, classic PANDAS and PANDAS variants (5). In all these disorders, the symptoms vary, but the etiology is almost the same. In each, it is hypothesized that antibodies produced as part of an immune response to GABHS surface proteins have antigenic similarities to central nervous system proteins (molecular mimicry) in susceptible persons. Genetic and familial factors may also play a role in the pathogenesis of PANDAS. It has been found in RF that certain families have a higher incidence of a monoclonal antibody, D8/17. Similarly, patients with PANDAS have been shown to have similar elevations of D8/17 (4).

The major clinical manifestations include tics and obsessive-compulsive symptoms in PANDAS. This type of neuropsychiatric symptoms is also observed in Sydenham’s chorea, which is the only recognized neurological manifestation of RF. It is seen in about 20% of patients with acute RF and most often occurs weeks to months after group A streptococcal infection (11). PANDAS patients do not present with classic choreiform movements or other symptoms of RF, but only with tics and/or obsessive-compulsive symptoms (12). Therefore, a detailed anamnesis and exploration are necessary and caution should be applied not to miss a RF.

Our case does not represent a classical PANDAS/PANDAS variant case, but it is obvious that the myoclonic symptoms were associated with streptococcal infection. Therefore, our case points out the need for re-evaluation of PANDAS variant criteria in the future.

Treatments including penicillin prophylaxis, intravenous immunoglobulin, plasma exchange, tonsillectomy are useful in this spectrum (1,13). Similarly, our case did not respond to antiepileptic and antidepressant treatment, but responded to penicillin.
It was observed that the first oropharyngeal infection and the following pyogenic skin lesions were associated with the myoclonic symptoms. It is known that PANDAS is related to oropharyngeal infection by streptococci, but we also suggest that streptococcus-associated skin lesions also may induce PANDAS signs.

References
