Pediatric Catatonia in Early-onset Schizophrenia and Treatment Implications

Chetan D Vispute, Ajita S Nayak, Jahnavi S Kedare, Nakul A Vanjari

ABSTRACT

A 13-year-old girl presented with symptoms of catatonia during second episode of early-onset schizophrenia. Catatonic features seen were motoric immobility, extreme negativism, mutism, ambitendency, and refusal to take food. She was initially treated with antipsychotic drugs but developed side effects. In view of life-threatening situation and absence of improvement, she was treated with electroconvulsive therapies (ECTs). Nine adequately spaced ECTs were given using propofol as the anesthetic agent. She showed significant response to ECTs with respect to her symptoms of catatonia and activities of daily living.

Keywords: Catatonic symptom, Electroconvulsive therapy, Pediatric catatonia, Schizophrenia.

How to cite this article: Vispute CD, Nayak AS, Kedare JS, Vanjari NA. Pediatric Catatonia in Early-onset Schizophrenia and Treatment Implications. MGM J Med Sci 2017;4(1):49-51.

Source of support: MGIHS

INTRODUCTION

Pediatric catatonia has been reported to be a potentially life-threatening but treatable syndrome. A study by Cohen et al1 has shown an incidence of catatonia in 0.6% of inpatient adolescents. It has been found to be associated with various disorders like psychotic, mood, autistic, developmental, and tic disorders. In some of the cases, pediatric catatonia was idiopathic and not associated with psychotic, affective, or medical disorder. Following mood disorders, schizophrenia has been found to be the most frequent diagnosis in cases of pediatric catatonia.

Early-onset schizophrenia (before the age of 18 years) is prevalent in 1 in 10,000 and has longer episode duration and a deteriorating course. Catatonic symptoms have not been frequently reported in these patients. The symptoms predominantly consist of delusions and hallucinations.1,2 Green et al3 examined 38 children with schizophrenic disorder who were younger than 12 years of age, and indicated that catatonia or other grossly disorganized behavior was present in 31.6% of the cases. In an Indian study by Thakur et al,2 5.5% of the entire sample and 17.7% of the patients with affective and nonaffective psychotic disorders had at least two signs of catatonia.

Treatment in these cases poses a unique challenge. Use of antipsychotic drugs has been reported to result in side effects in the form of sedation and extrapyramidal reaction.4 Electroconvulsive therapies (ECTs) have been rarely used due to stigma and risks of side effects. However, an estimated 75% of patients with catatonia have been reported to improve immediately after ECTs, whereas 46% were found to function at the premorbid level 6 months after ECTs.5 In children or adolescents, no fatalities as a consequence of ECTs have been published. In spite of the successful and safe use of ECTs in adult populations, its use in the child and adolescent population has been limited.5 We are reporting a case of pediatric catatonia in a girl of early-onset schizophrenia with onset at the age of 9 years.

CASE REPORT

The patient is a 13-year-old girl, right-handed, born out of nonconsanguineous marriage, full-term normal delivery with normal developmental milestones, educated up to fourth standard, menarche at the age of 12 years, with adequate social support. She was brought by mother for the chief complaints of withdrawn to self, disturbed sleep, refusal to accept food, not interacting with family members, and maintaining postures for long hours since 1 month. On examination on admission, she was found to have catatonic features in the form of ambitendency, mutism, negativism, posturing, immobility, rigidity, withdrawal, and flattened affect. Her score on 23-item Bush-Francis Catatonia Rating Scale (BCRS) was 28 and Columbia Impairment Rating Scale score (CIRS) was 40. Her electroencephalography (EEG) and magnetic resonance imaging (MRI) scan of brain were normal.
According to her mother, altered behavior was first observed at the age of 9 years, in the form of complaints of academic difficulties like lack of concentration in studies and staying aloof in class. She had started muttering to self and smiling inappropriately occasionally. She had also started becoming suspicious that some of her classmates were stealing her pencil and lunch box. She used to sleep with pencil and lunch box under her pillow every night. She used to close the doors and scream “thieves are coming.” Her school attendance had gradually decreased and she stopped studying. She stopped going to school eventually. She also reported auditory hallucinations of “God” and her dead father. She had been treated with oral antipsychotics (olanzapine, risperidone, amisulpride, haloperidol) and mood stabilizer sodium valproate over a period of 1.5 years. Improvement had been noted in the form of improved sleep and decreased auditory hallucinations. She continued to be withdrawn to self. Her speech output remained low. Her mother reported that these negative symptoms persisted till current episode.

They discontinued medications for 1.5 years after which she had the current exacerbation with catatonic features. In the current episode, she was treated with oral and injectable lorazepam. Injectable haloperidol was started due to lack of response. She developed side effects in the form of tremors and rigidity, hence, was shifted to tablet olanzapine. She was also treated for this extrapyramidal reaction with promethazine and benzodiazepines. She did not respond to the antipsychotic medications and her physical condition deteriorated, as refusal to food intake continued. Electroconvulsive therapy was considered. Second opinion to review the diagnosis, confirm illness severity, and treatment resistance was taken to corroborate the advisability of ECT. The adequacy of the workup was also reviewed. Her preanesthetic workup was done. Intravenous propofol (60–70 mg) was administered as anesthetic agent along with 25 mg of succinyl choline. Electroconvulsive therapies were administered (duration: 0.6 seconds, frequency: 70, pulse width: 1, current: 0.66 millicoulomb) and seizure duration between 20 and 25 seconds was obtained. Nine adequately spaced ECTs were given. Patient’s catatonic symptoms improved. Her BCRS scores declined to zero. Patient was discharged on 12.5 mg of tablet olanzapine in divided dosages. No memory disturbances were noted. Her mini mental status examination score was 25 on discharge. Six months after follow-up, patient is maintained and can independently carry out all tasks of basic activities of daily living scale like dressing, bathing, feeding self etc. On CIRS her scores have been reduced to 2.

**DISCUSSION**

Catatonic features in early-onset schizophrenia have been reported in very few studies. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) lists five clinical features of catatonic disorder: Motoric immobility; excessive motor activity; extreme negativism or mutism; peculiarities of voluntary movement; and echolalia or echopraxia. Though echolalia and echopraxia were absent in this patient, other severe catatonic features in the form of mutism, negativism, posturing, immobility, rigidity along with ambitendency, withdrawal, and refusal to eat and take medications were present.

The differential diagnosis of pediatric catatonia includes both psychiatric and neurological conditions. It is most commonly associated with mood disorder. Other psychiatric conditions that should be considered are schizophrenia and pervasive developmental disorder. Neurological conditions like seizure disorder, juvenile Parkinson disease, metabolic disorders, and psychoactive substance use need to be ruled out. In our patient, detailed history, physical examination, EEG, and MRI were not suggestive of any abnormality.

Metabolic parameters were within normal limits.

This patient also had positive family history of schizophrenia in two first-degree relatives. A strong genetic vulnerability in cases of early-onset schizophrenia has also been reported in other studies and may be responsible for the early onset and severity of the illness. Pathophysiological mechanisms indicated in catatonia are dysfunction in frontal lobe circuits and lesion in thalamic or parietal lobe, leading to disruption of connections from perceptual-integrating brain systems. The role of neurotransmitters dopamine and -aminobutyric acid has also been implicated.

In the first episode, the positive symptoms responded to antipsychotic medications, albeit with side effects. However, severe catatonic features in the second episode did not show significant response to oral or parenteral typical or atypical antipsychotics. Sedation and extrapyramidal side effects have been reported in children and adolescents with schizophrenia in similar studies. In view of persisting life-threatening symptoms of catatonia like refusal to accept food, water, and medication, presence of severe side effects of antipsychotics, patient was treated with ECT. Electroconvulsive therapy has been effectively used in children and adolescent in severe mood disorders, catatonia, and intractable psychotic disorders. In this patient, good response was seen with nine sessions of bilateral, brief pulse ECT. No memory deficits were observed after ECTs. Tardive seizures are a rare but potentially serious side effect commonly associated with the use of ECTs in children. No tardive seizures were noted in this case, as the ECTs were adequately spaced. The drug propofol was used as anesthetic agent that has been associated with shorter seizures, which might also explain the absence of prolonged seizures.
CONCLUSION

Life-threatening catatonic features can be seen in patients of schizophrenia in children and adolescents. Electroconvulsive therapy has been infrequently used in children due to stigma and risks of side effects. We feel it can be used safely in cases of pediatric catatonia with potentially life-threatening symptoms using newer and safer anesthetic techniques. Electroconvulsive therapy may be a life-saving procedure in such cases.

REFERENCES