Case Report

Use of Electroconvulsive Therapy in an Adolescent Patient with Catatonia

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ABSTRACT

There is lot of skepticism about the use of electroconvulsive therapy (ECT) in children and adolescents. However, available literature suggests that use of ECT can be at times life-saving in adolescents, especially those presenting with severe catatonia. We treated a 16-year-old female who presented to us with catatonia with a course of nine ECTs, with which she showed marked improvement. Review of the literature suggests that ECT should be considered as the second line treatment in the management of catatonia in adolescents.

Key words: *Adolescent, catatonia, electroconvulsive therapy*

INTRODUCTION

Catatonia was first described by Kahlbaum[1] in 1874, as a brain disorder, which has cyclic, alternating and progressive course. Over the years, understanding about catatonia has increased and it is now well-known that besides the primary psychiatric disorders, catatonia is associated with many neurological and medical disorders.[2] Catatonia in adolescents has been reported to be associated with affective, psychotic, autistic, developmental, drug induced and medical conditions.[3] Evidence suggests that the symptom profile of catatonia in adolescents is similar to adults. Further, as in adults, catatonia in children and adolescents also responds to benzodiazepines and electroconvulsive therapy (ECT).

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However, the literature on the use of ECT in adolescents with catatonia is limited. In this case report, we present a case of catatonic schizophrenia, treated with ECT and review the literature on the use of ECT in adolescent catatonia.

CASE REPORT

A 16-year-old single girl presented with an insidious onset illness of 3 year duration. For the initial 1 year, the symptoms were characterized by fearfulness, anxiety, derealization and poor academic performance. During the 2nd and 3rd years of symptomatic phase, she developed additional symptoms of social withdrawal, poor initiative, irritability, muttering and gesturing in air, suspiciousness, delusions of reference and persecution and delusion of misidentification, poor self-care and stopped studying. About a month prior to presentation to our center, her speech output started reducing, she had perseveration and later became mute, had marked psychomotor retardation, ambitendency, active and passive negativism, posturing and refusal to eat. She was taken to a psychiatrist for her symptoms and was given intravenous lorazepam up to 8 mg/day along with risperidone up to 4 mg/day, but did not show any improvement. Following this, consultation

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was sought at our center. There was no history suggestive of other delusions, hallucinations in any other modality, made phenomenon, somatic passivity, delusional perception, depressive symptoms, manic symptoms, head injury, fits, loss of consciousness, fever, substance use and thyroid dysfunction. Physical examination did not reveal any neurological deficit. Fundus examination did not reveal any abnormality. On mental status examination, patient was found to have immobility, posturing, withdrawal, gegenhalten, mutism, negativism, staring and drooling of saliva. Her Bush-Francis Catatonia rating scale (BFCRS) score was 20.

In view of her symptomatology, she was admitted to the in-patient unit of the hospital. On investigation, hemogram, liver function test, renal function test, serum electrolytes, thyroid function test, ultrasound abdomen, computerized tomography of brain, X-ray chest (posterior anterior view) and electrocardiogram did not reveal any abnormality. On the basis of the history and mental status examination, a diagnosis of catatonic schizophrenia was considered. She was initially treated with injection lorazepam 4 mg every 6 h for initial 24 h along with tablet olanzapine 7.5 mg/day but did not show any improvement. Following this, she was considered for ECT.

Her parents were educated about the electroconvulsive therapy procedure and the indications for the same in patient. A written informed consent was obtained from her father as he was her guardian. Attempt was also made to take patient's assent before initiating ECTs, but could not be done considering her condition. She was then started on bilateral modified ECT. She was administered nine ECTs (details shown in table-1) over the period of 3 weeks and dose of olanzapine was increased to 15 mg/day. With this treatment, gradually she showed improvement in all her symptoms. As her clinical condition improved, her assent was sought for subsequent ECTs. During this period, assessment for memory impairment was also undertaken following each ECT, but patient did not have any subjective complaints or objective signs of memory impairment. By her ninth ECT, her BFCRS score came down from 20 to 2 and following this, no more ECTs were given in view of a plateau of clinical response. On mental status examination, she only had blunted affect with no other active psychopathology at the end of the course of ECT. She was discharged after 1 week of observation after improvement. She was continued on Tab Olanzapine 15 mg/day after discharge.

DISCUSSION

Catatonia is characterized by motor, affective and regressive symptoms.[4] It is recommended that catatonia should be managed with high doses of benzodiazepines (i.e., lorazepam or other benzodiazepines) or ECT, in addition to the treatment of underlying medical and psychiatric disorder with specific treatment. However, the literature with regard to the use of ECT in adolescents is limited. In a review of the published literature from 1985 to 2009, the authors located 31 reports, which described 59 cases of catatonia in children and adolescents treated with ECT.[4] Majority of the patients described in the literature who were treated with ECT were males (57%). The age range of patients varied from 6 to 19 years with only three patients less than 11 years of age. Most of the cases were diagnosed with mood disorders (47.5%) and this was followed by schizophrenia (27.1%), pervasive developmental disorder (13.5%), organic catatonia (5%), psychotic disorders other than schizophrenia (5%) and one case (1.7%) each of idiopathic catatonia and familial catatonia with seizures. In terms of response to ECT, the data suggested that 45 patients (76.27%) had a favorable response, 3 (5%) cases had a partial response and in one case there was no response to ECT. The authors cautioned that while interpreting the efficacy data it is important to remember that there may a potential bias for reporting only those cases, which show improvement with ECT.[4] In another review, authors noted that

Table 1: Details of the electroconvulsive therapy course

Session no.	Glycopyrrolate (mg)	Suxamethonium (mg)	Thiopentone (mg)	Duration of current (in seconds)	Charge, millicoulombs	Energy, Joules	Length of motor seizures in seconds
1	0.2	50	125	0.6	72	9	70
2	0.2	40	125	0.6	72	9	65
3	0.2	40	175	0.6	72	9	0
				1.0	120	14	35
4	0.2	50	200	1.0	120	14	35
5	0.2	40	175	1.0	120	16	45
6	0.2	50	200	1.0	120	16	35
7	0.2	50	200	1.0	120	16	40
8	0.2	50	200	1.0	120	16	25
9	0.2	50	200	1.0	120	24	0
				1.4	168		25

bilateral (bitemporal or bifrontal) ECT has better efficacy than the unilateral ECT.[5] Further, it is suggested that if a patient responds partially to lorazepam it should be used concurrently with ECT for a better outcome in the acute management of catatonia.[5]

We carried out a search in PubMed and could locate 10 reports[6-15] of use of ECT in adolescents with catatonia published after the review of Consoli *et al*.[4] Eight out of the 10 reports, described 11 cases in which ECT was used in adolescents for treatment of catatonia in patients with varied clinical conditions [Table 2].[6-13] One case series described the use of maintenance ECT in three children with autism, in which ECT had led to resolution of acute symptoms of catatonia.[14] In the retrospective study from our center, which described the use of ECT in adolescents, out of the 25 patients, 17 had catatonic symptoms and the response rate in patients with catatonia was 91.6%.[15] The present case adds to the limited data, which is available and shows that use of ECT can be life-saving in adolescents with severe mental disorders.

From the above review, it can be concluded that ECT is an effective treatment for management of catatonia in adolescents. In view of the same, rather than banning the use of ECT in adolescents, it would be better to leave the decision to use and not to use ECT in adolescents in the hands of the clinicians.

Table 2: Case reports/case series of use of electroconvulsive therapy in adolescents published after Consoli *et al*.[4] review

Author	Age/gender	Diagnosis
Mehta *et al*.[6]	16, F	Bipolar disorder-manic
Dhossche *et al*.[7]	17, M	Sickle cell anemia
Ghaziuddin *et al*.[8]	18, M	Autism and mental retardation
	16, M	Autism and mental retardation
Wachtel *et al*.[9]	13, M	Congenital hydrocephalus with history of multiple shunt revisions and a stable prepontine arachnoid cyst
Wachtel *et al*.[10]	15, M	Cerebellar dysgenesis
Dhossche *et al*.[11]	18, M	Past diagnosis of high functioning autism (current presentation: Catatonic symptoms along with affective symptoms, psychotic symptoms, self-injurious behavior and Tics)
	19, M	Catatonic symptoms along with affective symptoms, psychotic symptoms, self-injurious behavior and Tics
Häßler *et al*.[12]	14, F	Schizophrenia
Jap and Ghaziuddin[13]	16, F	Down syndrome
	14, F	Down syndrome

REFERENCES

1. Kahlbaum K. Catatonia or the tension insanity. Berlin: Verlag August Hirshwald; 1874.
2. Mann SC, Caroff SN, Bleier HR, Welz WK, Kling MA, Hayashida M. Lethal catatonia. Am J Psychiatry 1986;143:1374-81.
3. Dhossche DM, Wilson C, Wachtel LE. Catatonia in childhood and adolescence: Implications for the DSM-5. Psychiatry 2010;17:35-9.
4. Consoli A, Benmiloud M, Wachtel L, Dhossche D, Cohen D, Bonnot O. Electroconvulsive therapy in adolescents with the catatonia syndrome: Efficacy and ethics. J ECT 2010;26:259-65.
5. Dhossche DM, Wilson C, Wachtel LE. Catatonia in childhood and adolescence: Implications for the DSM-5. Prim Psychiatry 2010;17:35-9.
6. Mehta A, Carlton E, Franco K. Catatonia in adolescence: A case report. Psychiatry (Edgmont) 2008;5:37-41.
7. Dhossche DM, Shettar SM, Kumar T, Burt L. Electroconvulsive therapy for malignant catatonia in adolescence. South Med J 2009;102:1170-2.
8. Ghaziuddin N, Gih D, Barbosa V, Maixner DF, Ghaziuddin M. Onset of catatonia at puberty: Electroconvulsive therapy response in two autistic adolescents. J ECT 2010;26:274-7.
9. Wachtel LE, Baranano K, Reti IM. Electroconvulsive therapy for catatonia in a boy with hydrocephalus and an arachnoid cyst. Pediatr Neurol 2010;43:73-5.
10. Wachtel LE, Crawford TO, Dhossche DM, Reti IM. Electroconvulsive therapy for pediatric malignant catatonia with cerebellar dysgenesis. Pediatr Neurol 2010;43:427-30.
11. Dhossche DM, Reti IM, Shettar SM, Wachtel LE. Tics as signs of catatonia: Electroconvulsive therapy response in 2 men. J ECT 2010;26:266-9.
12. Häßler F, Reis O, Weirich S, Höppner J, Pohl B, Buchmann J. A case of catatonia in a 14-year-old girl with schizophrenia treated with electroconvulsive therapy. Z Kinder Jugendpsychiatr Psychother 2013;41:69-74.
13. Jap SN, Ghaziuddin N. Catatonia among adolescents with Down syndrome: A review and 2 case reports. J ECT 2011;27:334-7.
14. Wachtel LE, Hermida A, Dhossche DM. Maintenance electroconvulsive therapy in autistic catatonia: A case series review. Prog Neuropsychopharmacol Biol Psychiatry 2010;34:581-7.
15. Grover S, Malhotra S, Varma S, Chakrabarti S, Avasthi A, Mattoo SK. Electroconvulsive therapy in adolescents: A retrospective study from north India. J ECT 2013;29:122-6.

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