Successful Treatment of Catatonia: A Case Report and Review of Treatment

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Abstract
Herein, we report the case of a 20-year-old Caucasian male with a previous psychiatric history of schizophrenia, autism, unspecified intellectual disorder, and past medical history of hypertension, who presented after a suicidal attempt. One month prior to admission for the suicidal attempt, the patient had mutism. While admitted, the patient showed signs of mutism, posturing, negativism, and waxy flexibility. Treatment with both aripiprazole and lorazepam was effective and reversed the patient’s catatonia after low-dose titration. This case highlights the importance of reviewing patient history and presenting symptoms in the management of catatonia. Additionally, this case provides an opportunity to review the diagnostic approach and treatment type used for patients presenting with catatonia.

Introduction
The term catatonia is a derivation from the Greek words kata (down) and tonas (tension or tone) [1]. Catatonia was first described by Dr. Karl Kahlbaum, a German psychiatrist, in 1874. His description of catatonia focused heavily on the phenomenology of catatonia and the course of the illness [2]. His work, which he presented in the late 1800s, supported the notion that catatonia resulted from multiple causes and was not an independent disease entity [2]. Many clinicians matched their understanding of catatonia with that of Kahlbaum’s understanding recognizing catatonia as a multicausality phenomenon [2].

In more recent years, catatonia has been defined as a clinical syndrome marked by at least three of the following 12 psychomotor symptoms outlined in the DSM-5: catalepsy, waxy flexibility, stupor, agitation, mutism, negativism, posturing, mannerisms, stereotypes, grimacing, echolalia, or echopraxia. Catatonia’s primary clinical feature is a marked psychomotor disturbance with symptoms ranging from stupor to agitation [3]. Around 90,000 cases of catatonia occur in the United States per year [4]. Catatonia has a reported prevalence of 7% to 38% in psychiatric patients [5]. People with mood disorders, psychosis, increased age, increased frequency of depressive episodes, and cognitive impairment are at an increased risk for developing catatonia [5-7].

We report a case of catatonia in a 20-year-old Caucasian male. Treatment with Aripiprazole and Lorazepam was effective and resulted in the reversal of the patient’s catatonia after low dose titration. This case highlights the management of catatonia, the importance of patient history, and presenting symptoms. Additionally, this case provides an opportunity to review the diagnostic approaches and treatment types that are used for patients presenting with catatonia-like symptoms.

Case Presentation
A 20-year-old Caucasian male with a previous psychiatric history of schizophreniform, autism, an unspecified intellectual disorder, and a past medical history of hypertension, presented to the emergency room for a “syncope” or “seizure-like” activity. The patient had no prior history of seizures or syncope.

Approximately two months prior, the patient went on a camping trip where the patient admitted to using marijuana and possibly some other unknown substances. After returning from a camping trip the patient stated he had several hallucinations and stated, “I am not smoking weed anymore.” The patient stated at the time he was hearing voices, claiming that he was possessed by a demon, and admitted to both suicidal and homicidal ideation. For the next month, the patient became withdrawn from social contacts demonstrating increased paranoia and disturbances in speech.

The patient was seen pacing the floor inside the family’s residence with a gun which the mother had to wrestle out of his hands. Additionally, the patient was seen to have cuts on his neck.
admitted to a behavioral unit after being evaluated in the ED. Prior medication history was unknown other than quetiapine use in the past of unknown dose or frequency. The patient was initially started on paliperidone 3 mg twice a day and haloperidol 1 mg intramuscular twice a day as needed for agitation. His medication regime was later changed to paliperidone 12 mg in the evening alone. He was then started on a long-acting paliperidone injection of 234 mg before discharge. The patient was discharged home two weeks after admission to the behavioral unit with a follow-up appointment at a psychiatry clinic which the patient failed to attend.

The mother states that after the missed appointment the patient said he wanted to kill himself and rushed out of his residence to look for a hidden gun at his uncle's house. The patient was detained and told that he needed to be admitted to the hospital for suicidal ideations. The patient's mother reported he had a single isolated "seizure-like" incident that lasted two minutes. The patient experienced what was described as a loss of consciousness, body movements, and no discernible post-ictal period. The seizure was witnessed by the family. The patient was brought to the emergency department, where he endorsed suicidal ideations and hopelessness. After being medically cleared, the patient was admitted to a behavioral unit.

On presentation to the behavioral unit, the patient is catatonic and either unwilling to speak to the interviewer or unable to. Bush-Francis Catatonia Rating Scale was 24 on presentation. The patient was admitted to the inpatient unit and was placed on appropriate precautions. The patient was started on paliperidone 6 mg daily, lorazepam 0.5 mg twice a day, and sertraline 100 mg daily. The patient stayed in bed and did not move. The patient refused to get out of bed and would not respond to stimulation. The patient refused oral medications and was placed on forced medication protocol. On the third day after admission, the patient remained catatonic-like and lorazepam was increased to 1 mg twice a day, paliperidone was discontinued and aripiprazole was started at 10 mg daily. On the fifth day of admission, the patient began to get out of bed and seldomly walked in the halls. He was noted to seem to become frightened at unknown entities in the room; aripiprazole was increased to 15 mg daily. On the seventh day, the patient was noted to have some improvements in affect, the patient was seen walking with a shuffling gait, and no swing of arms. The dose of aripiprazole was increased to 20 mg daily. The next day lorazepam dose frequency was increased to 1 mg three times a day. The patient had significant improvement in affect, seldomly spoke, and was now walking out of the room more often than not. On the ninth day no medication changes were made, the patient states he is doing well and is smiling at staff. The patient is less stiff, with a swing of arms, and no longer has a shuffling gait. The next day the patient was deemed to be psychiatically stable. Bush-Francis Catatonia Rating Scale was 0. The patient was in good spirits, answering questions and verbalizing understanding of the plan moving forward. After discharge, the patient continued to improve and has not had any readmissions after six months (Table 1).
Timeline

2 months prior
The patient went on a camping trip using marijuana and possibly some other substances. After returning home the patient had several hallucinations, hearing voices, claiming that he was possessed by a demon.

The next month
The patient became withdrawn from social contacts, paranoid and decreased speaking for a month.

1 month prior
The patient was found pacing the floor inside the family’s residence with a gun and cuts on his neck. The patient was admitted to a behavioral unit and initially started on paliperidone 3 mg twice a day and haloperidol 1 mg intramuscular twice a day. His medication regime was later changed to paliperidone 12 mg in the evening alone. He was then started on a long-acting paliperidone injection of 234 mg before discharge home after a two week admission.

2 weeks before
The patient fails to follow-up to his psychiatry appointment.

Day of admission
The patient states that he wanted to kill himself and rushed out of his residence to look for a hidden gun, was detained and told that he needed to be admitted. He then proceeded to have a single isolated “seizure-like” incident which was described as a loss of consciousness, body movements, and no discernible post-ictal period. After being medically cleared, the patient was admitted to a behavioral unit. Bush-Francis Catatonia Rating Scale 24.

Admission day 1
The patient is catatonic and either unwilling to speak to the interviewer or unable to. Started on paliperidone 6 mg daily, lorazepam 0.5 mg twice a day, and sertraline 100 mg daily. Patient refused to get out of bed and would not respond to stimulation. The patient refused oral medications and was placed on forced medication protocol.

Day 3
The patient remained catatonic-like and lorazepam was increased to 1 mg twice a day, paliperidone was discontinued and aripiprazole was started at 10mg daily.

Day 5
The patient began to get out of bed, and seldomly walked in halls. He was noted to seem to become frightened at unknown entities in the room. Aripiprazole was increased to 15 mg daily.

Day 7
The patient was noted to have some improvements in affect, the patient was seen walking with shuffling gait, and no swing of arms. Dose of aripiprazole was increased to 20 mg daily.

Day 8
Lorazepam dose frequency was increased to 1 mg three times a day. The patient had significant improvement of affect, seldom spoke, and was now walking out the room more often than not.

Day 9
No medication changes were made, the patient states he is doing well and is smiling at staff. The patient is less stiff, with swing of arms, and no longer a shuffling gait.

Day 10
The patient was deemed to be psychiatrically stable. Bush-Francis Catatonia Rating Scale of 0. Patient was in good spirits, answering questions and verbalized understanding of the plan moving forward.

The next six months
After discharge, the patient continued to improve and has not had any readmissions after six months.

| Events |
|-----------------|
| 2 months prior | The patient went on a camping trip using marijuana and possibly some other substances. After returning home the patient had several hallucinations, hearing voices, claiming that he was possessed by a demon. |
| The next month | The patient became withdrawn from social contacts, paranoid and decreased speaking for a month. |
| 1 month prior | The patient was found pacing the floor inside the family’s residence with a gun and cuts on his neck. The patient was admitted to a behavioral unit and initially started on paliperidone 3 mg twice a day and haloperidol 1 mg intramuscular twice a day. His medication regime was later changed to paliperidone 12 mg in the evening alone. He was then started on a long-acting paliperidone injection of 234 mg before discharge home after a two week admission. |
| 2 weeks before | The patient fails to follow-up to his psychiatry appointment. |
| Day of admission | The patient states that he wanted to kill himself and rushed out of his residence to look for a hidden gun, was detained and told that he needed to be admitted. He then proceeded to have a single isolated “seizure-like” incident which was described as a loss of consciousness, body movements, and no discernible post-ictal period. After being medically cleared, the patient was admitted to a behavioral unit. Bush-Francis Catatonia Rating Scale 24. |
| Admission day 1 | The patient is catatonic and either unwilling to speak to the interviewer or unable to. Started on paliperidone 6 mg daily, lorazepam 0.5 mg twice a day, and sertraline 100 mg daily. Patient refused to get out of bed and would not respond to stimulation. The patient refused oral medications and was placed on forced medication protocol. |
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| Day 5 | The patient began to get out of bed, and seldomly walked in halls. He was noted to seem to become frightened at unknown entities in the room. Aripiprazole was increased to 15 mg daily. |
| Day 7 | The patient was noted to have some improvements in affect, the patient was seen walking with shuffling gait, and no swing of arms. Dose of aripiprazole was increased to 20 mg daily. |
| Day 8 | Lorazepam dose frequency was increased to 1 mg three times a day. The patient had significant improvement of affect, seldom spoke, and was now walking out the room more often than not. |
| Day 9 | No medication changes were made, the patient states he is doing well and is smiling at staff. The patient is less stiff, with swing of arms, and no longer a shuffling gait. |
| Day 10 | The patient was deemed to be psychiatrically stable. Bush-Francis Catatonia Rating Scale of 0. Patient was in good spirits, answering questions and verbalized understanding of the plan moving forward. |
| The next six months | After discharge, the patient continued to improve and has not had any readmissions after six months. |

TABLE 1: Timeline of patient’s stay in the behavioral hospital.

Discussion
Diagnostic approach
The Bush-Francis Catatonia Rating Scale (BFCRS), designed in 1996 by Bush et al., is currently the most preferred method for diagnosing catatonia due to its five-minute administration time, reliability, and validity [8,9]. Two versions of the BFCRS exist, an extended one, which consists of 23 items rated on a scale from 0 to 3, and a shortened one consisting of only the first 14 items expressed in the extended version [10]. Other scales used to diagnose catatonia include the Modified Rogers Catatonia Scale, Rogers Catatonia Scale, a revision of the BFCRS proposed by Ungvari, Northoff Catatonia Rating Scale, Braunig Catatonia Rating Scale, and the Kanner Scale [10,11]. No laboratory tests that define catatonia exist [11].

Benzodiazepines are the mainstay of the treatment of catatonia but are also commonly used as a diagnostic probe [12]. During the test, the patient is examined for signs of catatonia, and 1 or 2 mg of Lorazepam is administered intravenously. After a five-minute period, the patient is then re-examined. If there has been no change, a second dose is given, and the patient is again reassessed. A positive response is a marked
response is required in severe cases or life-threatening conditions, ECT should be initiated.

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Conclusions

In this manuscript, we presented a case of catatonia in a 20-year-old Caucasian male in which treatment
with Aripiprazole and Lorazepam was effective in reversing the patient’s symptoms. In addition, an
examination of the current diagnostic approach and treatment type used for patients presenting with
catatonia was conducted. We found that the BFCRS is currently the most preferred method for diagnosing
catatonia. We also concluded that benzodiazepines, despite the successful use of other pharmacological
agents, are the most popular treatment source used for catatonia patients, with Lorazepam commonly being
the initial choice of treatment. Second-generation antipsychotic medications may be used on a case-by-case basis and provide some benefits. For patients who are not responding to benzodiazepines or when a rapid response is required in severe cases or life-threatening conditions, ECT should be initiated.
Additional Information

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Bellak L: Dementia Praecox in Childhood . Grune and Stratton, New York, NY; 1947.
2. Wilcox JA, Duffy PR: The syndrome of catatonia. Behav Sci (Basel). 2015, 5:576-88. 10.5390/bs504057b
3. Chandra SR, Isaac TG, Shivaram S: Catatonia in children following systemic illness. Indian J Psycho Med. 2015, 37:415-8. 10.4103/0255-7176.168582
4. Taylor MA, Fink M: Catatonia in psychiatric classification: a home of its own. Am J Psychiatry. 2005, 162:1233-41. 10.1176/appi.ajp.162.7.1233
5. Bhati MT, Datto CJ, O’Reardon JP: Clinical manifestations, diagnosis, and empirical treatments for catatonia. Psychiatry (Edgmont). 2007, 4:46-52.
6. Jaimez-Abornoz W, de Pellon-Santamaria AR, Nizama-Via A, Isetta M, Albajar I, Serra-Mestres J: Catatonia in older adults: a systematic review. World J Psychiatry. 2022, 12:548-67. 10.5490/wjp.v12.i2.548
7. Cuevas-Esteban J, Iglesias-González M, Rubio-Valera M, Serra-Mestres J, Serrano-Blanco A, Baladon L: Prevalence and characteristics of catatonia on admission to an acute geriatric psychiatry ward . Prog Neuropsychopharmacol Biol Psychiatry. 2017, 78:27-35. 10.1016/j.pnpb.2017.05.013
8. Kirkhart R, Ahuja N, Lee JW, et al.: The detection and measurement of catatonia. Psychiatry (Edgmont). 2007, 4:52-6.
9. Wong E, Ungvari GS, Leung SK, Tang WK: Rating catatonia in patients with chronic schizophrenia: Rasch analysis of the Bush-Francis Catatonia Rating Scale. Int J Methods Psychiatr Res. 2007, 16:161-70. 10.1002/mpr.224
10. Nunes AL, Filgueiras A, Nicolato R, Alvarenga JM, Silveira LA, Silva RA, Cheniaux E: Development and validation of the Bush-Francis Catatonia Rating Scale - Brazilian version. Arq Neuropsiquiatr. 2017, 75:44-9. 10.1590/0004-282X20160168
11. Sienert P, Roosleer J, De Fruyt J: Measuring catatonia: a systematic review of rating scales. J Affect Disord. 2011, 135:1-9. 10.1016/j.jad.2011.02.012
12. Sienert P, Dhoosche DM, Vancampfort D, De Hert M, Gazdag G: A clinical review of the treatment of catatonia. Front Psychiatry. 2014, 5:181. 10.3389/fpsyg.2014.00181
13. Fink M, Taylor MA: Catatonia: A Clinician’s Guide to Diagnosis and Treatment . Cambridge University Press, New York, NY, 2005.
14. Bush G, Fink M, Petrides G, Dowling F, Francis A: Catatonia. II. Treatment with lorazepam and electroconvulsive therapy. Acta Psychiatr Scand. 1996, 95:137-43. 10.1111/j.1600-0447.1996.tb09815.x
15. Raffin M, Zugaj-Bienzou L, Boleau N, Milhiet V, Laurent C, Cohen D, Consoli A: Treatment use in a prospective naturalistic cohort of children and adolescents with catatonia. Eur Child Adolesc Psychiatry. 2015, 24:441-9. 10.1007/s00787-014-0595-y
16. Zaman H, Gibson RC, Walcott G: Benzodiazepines in catatonia: a review. J Neuropsychiatry Clin Neurosci. 2009, 21:371-80. 10.1176/jnp.2009.21.4.371
17. Fink M, Taylor MA: Neuroleptic malignant syndrome is malignant catatonia, warranting treatments efficacious for catatonia. Prog Neuropsychopharmacol Biol Psychiatry. 2006, 30:1182-5; author reply 1184-5. 10.1016/j.pnpb.2006.05.029
18. Naber D, Holzback R, Perro C, et al.: Clinical management of clozapine patients in relation to efficacy and side-effects. Br J Psychiatry Suppl. 1992, 54:9. 10.1192/s0007125000296951
19. Cassidy EM, O’Brien M, Osman MF, Finucane J, O’Keane V: Lethal catatonia responding to high-dose olanzapine therapy. J Psychopharmacol. 2001, 15:502-4. 10.1177/026988110101500412
20. Grenier E, Ryan M, Ko E, Fajardo K, John V: Risperidone and lorazepam concomitant use in clonazepam refractory catatonia: a case report. J Nerv Ment Dis. 2011, 199:987-8. 10.1097/NMD.0b013e31823929d7e
21. Carpenter SS, Hatchett AD, Fuller MA: Catatonic schizophrenia and the use of memantine. Ann Pharmacother. 2006, 40:344-6. 10.1345/aph.12297
22. van Waarde JA, Tuerlings HJ, Verwey B, van der Mast RC: Electroconvulsive therapy for catatonia: treatment characteristics and outcomes in 27 patients. J ECT. 2010, 26:248-52. 10.1097/YCT.0b013e3181c18a13