

# Catatonia in major depressive disorder: diagnostic dilemma. A case report

## Abstract

Catatonia is a complex neuropsychiatric syndrome that is often associated with psychiatric, neurological and/or medical conditions. In order to make a diagnosis of catatonia, the clinical picture must be dominated by three or more of the following symptoms; cataplexy, waxy flexibility, stupor, agitation, mutism, negativism, posturing, mannerisms, stereotypies, grimacing, echolalia, and echopraxia. We present a case of a 58-year-old female with no prior psychiatric history who presented to the psychiatric emergency room with a three-week history of feeling depressed, anhedonic, hopeless, helpless, and worthless, associated with poor sleep, poor concentration, low energy, significant weight loss due to lack of appetite, and suicidal ideations after she saw her ex-boyfriend holding hands with another woman. Patient exhibited symptoms such as mutism, hyperextension of spine, clinching of jaw, psychomotor retardation which suggested probable diagnosis of catatonia at the background of major depressive disorder nonresponding to treatment. This case report demonstrates the need for a high index of suspicion and early screening for catatonia in psychiatric patients given the high morbidity and mortality that is associated with this condition if delayed or undiagnosed.

**Keywords:** major depressive disorder, catatonia, mood disorder, neuropsychiatry, cataplexy, waxy flexibility, stupor, agitation, mutism, negativism, posturing, mannerisms, stereotypies, grimacing, echolalia, echopraxia

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## Introduction

Catatonia is a complex neuropsychiatric syndrome that is often associated with psychiatric, neurological and/or medical conditions. According to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), catatonia is characterized by three or more of the following symptoms; cataplexy, waxy flexibility, stupor, agitation, mutism, negativism, posturing, mannerisms, stereotypies, grimacing, echolalia, echopraxia.<sup>1</sup> Over the years, the classification of catatonia has evolved. Historically, catatonia was associated with schizophrenia and classified as a sub-type of the disorder but there is increasing evidence that catatonia can occur in patients with primary mood disorders, neurologic disease, and other medical conditions.<sup>2</sup> Some authors still argue that catatonia occurs more frequently in patients with mood disorders than in schizophrenia. However, recent studies show that the prevalence of catatonia among schizophrenic patients ranges between 4% – 15%.<sup>3,4</sup>

Although the symptoms of catatonia are distinct, studies have shown significant under-diagnosis or missed diagnosis of this condition. In a retrospective study done in a medical inpatient unit between 2011 and 2013 using DSM-5, of the total of 133 cases satisfying the diagnosis of catatonia, 79 were undiagnosed. The study found that psychiatry consultation decreases the odds of under-diagnosis, whereas agitation, grimacing or echolalia increases the odds of under-diagnosis. The prevalence of catatonia differs in different medical settings ranging from 5%-18% on inpatient psychiatric units, 12% in drug-naive patients with first-episode psychosis, 3.3 on a neurology/neuropsychiatric tertiary care inpatient units, 1.6% to 1.8% on psychiatry consultation-liaison services, 8.9% in elderly patients

and 3.8% on intensive care units.<sup>5</sup> It has been reported that catatonia carries a high risk of morbidity and mortality, partly due to failure of timely recognition and initiation of appropriate treatment.<sup>6</sup> Catatonia appears to be a risk factor for developing neuroleptic malignant syndrome, which has a mortality rate of approximately 10% and may be clinically difficult to distinguish from malignant catatonia.<sup>7</sup>

Catatonia occurs frequently in acutely ill patients.<sup>8</sup> Some studies have also reported catatonic syndrome in children and adolescents.<sup>9</sup> Prompt diagnosis and adequate treatment are very crucial in the management of catatonia to avoid poor outcomes. Most times, the diagnosis of catatonia is missed because some of the symptoms of catatonia overlap with other psychiatric disorders, and this could be life-threatening to the patient.<sup>10</sup> Symptoms and syndromes that should be differentiated from catatonia include; extrapyramidal side effects, neuroleptic malignant syndrome, non-convulsive status epilepticus, abulia, and locked-in syndrome.<sup>7</sup> We present a case of a 58-year-old female who presented to the psychiatric emergency department with symptoms suggestive of major depressive disorder (MDD), single episode, with catatonic features.

## Case presentation

Patient is a 58-year-old African American female, single, unemployed, financially supported by government assistance, domiciled with her niece with no reported prior psychiatric history and past medical history of Anemia, Hepatitis C, Thyroid disease, Uterine Fibroids status post (S/P) myomectomy, Kidney disease, well-differentiated adenocarcinoma of the colon S/P resection who was brought to the psychiatric emergency department by ambulance, activated by her niece for feeling depressed.

Upon evaluation, she was poorly groomed and appeared unkempt. Patient reported feeling depressed, anhedonic, hopeless, helpless, and worthless, associated with significant weight loss due to lack of appetite. She also reported poor sleep, poor concentration, low energy, and suicidal ideations with no intention or plan. She reported that these feelings started few weeks prior to presentation when she saw her ex-boyfriend with another woman holding hands. Patient could not recall the exact number of weeks but states it was more than 4 weeks. She reported that they were in a relationship for 31 years before they separated 1 year prior to this incident.

The patient was admitted to the psychiatric unit for stabilization and safety. During her inpatient stay, the patient continued to endorse poor appetite, low energy, depressed mood, anhedonia, suicidal ideation, feelings of hopelessness and amotivation. There was observable psychomotor retardation. She was started on Mirtazapine 15mg orally at bedtime for depressed mood, appetite, and sleep. On day 2 on the inpatient unit, Remeron was titrated to 30mg. On day 15, the patient continued to endorse poor appetite and depressed mood; hence she was started on Aripiprazole 10mg orally daily and Megestrol acetate (Megace) 400mg orally twice daily for appetite booster. Aripiprazole is used as an adjunct to treatment of depression in addition that it is stimulating. On day 24, the patient's clinical condition was not improving, including her appetite; she was started on Methylphenidate 5mg orally twice daily. The patient wandered in the hallway of the unit and exhibited occasional selective mutism, poor oral intake and a flat affect.

On day 27, she continued to decompensate; there was objective evidence of 8-pound (lbs.) weight loss since her admission, suicidal ideations with unclear intent and plan, worsening psychomotor retardation, depressed mood, and anhedonia. Laboratory investigation was performed which revealed evidence hypoglycemia and dehydration. The patient was subsequently transferred to the medical unit for intravenous (IV) rehydration. On the medical unit, she was rehydrated with IV fluids and a nasogastric tube inserted for feeding and medication administration. On day 37, she was transferred back to the psychiatric floor for continued treatment of her depression.

On return to the psychiatry unit, she continued to exhibit worsening loss of appetite to the extent she stayed for 4 consecutive days without eating and only managed few sips of drinks. The patient had a further 2 lbs. weight loss. On day 51, changes were made to her medication regimen: Ritalin was increased to 10mg orally in the morning and 5mg at lunchtime. Sertraline 100mg orally once daily for depression was started. Remeron dose was decreased to 15mg orally at bedtime. Aripiprazole was also decreased to 5mg orally daily. On day 52, the patient became more rigid in posture, with clenched teeth during oral intakes. She mobilized in a wheelchair in a bent posture with the spine in a hyperextended position. She would not stand up, sleep on a bed or walk independently. The patient became completely mute and stared more often. She was then screened for catatonia for which she scored 23 on the Bush – Francis Catatonia Rating Scale (BFCRS). She screened positive with 7 symptoms out of 14 required for screening. Hence, Lorazepam 2mg Intramuscularly (IM) was given with significant improvement 20mins after the injection. She tolerated it with no reported adverse effects. She was able to converse with staff and other patients after the injection, requested for a meal by her for the very first time, and made a telephone call to her niece. The patient had a repeat dose of Lorazepam the next day but appeared drowsy and was sleeping too much; as a result, Lorazepam dose was

decreased to 1mg IM and her Remeron decreased to 7.5mg orally at bedtime. The next day, the patient continued to show clinically significant improvement, became less drowsy, and engaged more in her care. Her appetite improved and she took her medications without clenching her teeth. She was able to mobilize independently. Lorazepam was switched to the oral form and Zoloft was increased to 150mg orally once daily. She began to participate in activity and group therapy sessions. On day 56, repeat screening with BFCRS was negative for catatonia and the score was zero. The patient's weight on day 62 showed she had gained 10lbs, her depressive symptoms had significantly improved, and her affect was brighter. It is worth noting that the patient had various specialty consultations during her inpatient stay: Gastroenterology, Neurology, Pulmonary and Geriatrics, none provided a medical diagnosis. She was discharged on day 63.

Blood investigation: Thyroid function test, complete blood count, complete metabolic panel, lipid panel, urine toxicology screen was done on admission and values were within normal limits.

## Discussion

This report described a detailed clinical course of catatonia in a patient with major depressive disorder (MDD). This patient was initially thought to have only clinical features suggestive of MDD according to the DSM-5 diagnostic criteria. However, her symptoms were not responsive to the treatment. On the contrary, her symptoms responded to the administration of Lorazepam when the proper diagnosis was made. This case corroborates existing scientific evidence of the high prevalence of missed, delayed or under-diagnosis of catatonia. It appears that catatonia can mask the treatment outcome if catatonia is a component of another psychiatry diagnosis; hence improvement in other depressive symptoms could not be appreciated if catatonia is a component of the depressive disorder.

In the psychiatric unit, catatonia is becoming increasingly associated with mood disorder<sup>11</sup> and the prevalence is dependent on the scaling system used. A recent study conducted in India using Bush-Francis catatonia rating scale (BFCRS), Northoff catatonia scale (NCS), International Classification of Disease tenth edition (ICD-10) and the DSM-5, demonstrated differences in the prevalence of catatonia base on the rating scale and or the diagnostic criteria used. Overall, the study indicated that the occurrence of catatonia ranges from 5.3% to 19% in the psychiatric unit. Catatonia was revealed to be more severe in the early stages of illness, in those with prior episodes of catatonia and in the pediatric population.<sup>12</sup>

This case report demonstrated the importance of a high index of clinical suspicion, proper physical and mental status assessment in diagnosing catatonia that is co-occurring with another mental illness. Our patient's diagnosis was delayed and missed by both the medical and psychiatric team because of the low index of suspicion, hence was easily overlooked. Another possible reason is the overlapping symptoms of catatonia with MDD, especially psychomotor retardation. These points to the need for early screening of Catatonia in high risk individuals. Diagnosing catatonia is a major challenge for two parts. First, there are no subjective findings on laboratory or imaging studies, so the diagnosis depends solely on clinical assessments and rating scales. Second, there is almost always an associated medical, neurological or psychiatric condition. Despite the aforementioned challenges, a detailed assessment is usually enough to make a diagnosis as it is a clinical diagnosis. A common finding on examination is an abnormality in the Clock Drawing Test (CDT).

This may be suggestive of impaired cognition in Catatonia. CDT becomes very useful in situations where complex neuropsychological evaluation is impossible.<sup>13</sup> Rating scales like BFCRS have been used over the years for screening purposes, to quantify the severity of catatonia as well as evaluate response to treatment.<sup>14</sup> There are several rating scales available for clinical use, but BFCRS is commonly used because it is simple to administer and due to its reliability and validity.<sup>15</sup>

Although the exact cause of catatonia is unclear, changes in Gamma-aminobutyric acid and glutamate signaling has been postulated as a causative factor.<sup>13</sup> Also, imaging studies in psychotic patients with hypokinetic catatonia revealed increased neural activity in the premotor areas.<sup>11</sup> Despite the poor understanding of the etiology of catatonia, patients with this condition respond rapidly to benzodiazepine (BZD) and electroconvulsive therapy (ECT).<sup>14</sup> The efficacy of this treatment approach was confirmed in our case. Our patient responded well to treatment with BZD in 20 minutes and clinically improved within four days. However, in cases where BZD is ineffective, and ECT unavailable, patients may benefit from atypical antipsychotics, N-methyl-D-aspartate-receptor antagonists and anti-epileptic drugs.<sup>16,17</sup> MDD patients with catatonia have a remission rate of 80% in adults and 65% in children and this is achieved in four to ten days on treatment with BZD.<sup>18</sup> Studies have suggested the use of repetitive transcranial magnetic stimulation (rTMS) as an alternative to ECT for the treatment of persistent severe catatonia for both acute treatment and maintenance.<sup>19</sup>

## Conclusion

Catatonia is treatable if diagnosed early and accurately. But if left untreated, it could lead to high morbidity and mortality. Therefore, physicians must have a high index of suspicion when managing patients with features of catatonia and if possible, a psychiatrist should be consulted.

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## Conflicts of interest

The authors declare that there is no conflict of interest.

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