

# A Multimedia Description of Catatonia Secondary to Anti–NMDA-Receptor Encephalitis

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Catatonia is a complex, life-threatening neuropsychiatric syndrome presenting with a constellation of behaviors, motor symptoms, and autonomic dysregulation.<sup>1–3</sup> While it may signify a primary psychiatric etiology, catatonic presentations often develop secondary to substance exposure or medical illnesses. Catatonia has been noted as part of the symptom complex of autoimmune encephalitis, which with early detection can be treatable to full recovery.<sup>4,5</sup> Catatonia is challenging to diagnose due to a wide range of associated symptoms.<sup>6,7</sup> In an effort to facilitate prompt recognition and treatment, a now-recovered patient requests the dissemination of video taken by her spouse documenting her catatonia, ultimately determined to be secondary to anti-*N*-methyl-D-aspartate receptor (NMDAr) encephalitis.

## Case Report

A 47-year-old woman with a history of 2 psychiatric admissions for suicidal ideation 10 years prior presented with altered mental status 1 week after treatment with high-dose corticosteroids for a new diagnosis of optic neuritis. She exhibited waxing and waning lucidity, paranoia, visual hallucinations, crying, laughing, staring, grimacing, echolalia/echopraxia, mannerisms, verbigeration, and negativism (Video, Table 1). She also exhibited motor symptoms of rigidity and autonomic dysregulation with hypotension. Symptoms did not remit with steroid discontinuation.

Electroencephalogram revealed no epileptic activity. Brain magnetic resonance imaging demonstrated leptomeningeal enhancement in the left orbitofrontal cortex and frontoparietal lobe, raising concern for encephalitis. Serum and cerebrospinal fluid autoimmune panel returned positive for anti-NMDAr antibodies. She was treated with plasma exchange therapy, which commenced while awaiting autoimmune panel results, and rituximab. For symptomatic treatment of catatonia, lorazepam, valproic acid, and aripiprazole were administered. Obstetrics-gynecology follow-up ruled out the presence of an ovarian tumor. Over the course of the subsequent year, she completely recovered to her previous baseline mental and functional status, and psychotropic agents were tapered to discontinuation.

## Discussion

Catatonia describes a complex neuropsychiatric syndrome with characteristic behavioral and motor symptoms. The patient presented with classic symptoms of catatonia due to anti-NMDAr encephalitis. The history of previous psychiatric admissions may have delayed recognition of the underlying cause of the patient's neuropsychiatric symptoms. Fortunately, neurologic abnormalities, including visual changes and weakness, were recognized and further evaluated with electroencephalogram (to assess for seizure activity), lumbar puncture (to assess for viral encephalitis and autoimmune or

paraneoplastic antibodies), and brain magnetic resonance imaging (to exclude intracranial contributors to altered mental status), leading to timely diagnosis and treatment.

Upwards of 50% of catatonia cases are related to an underlying medical cause, including ovarian teratomas with associated anti-NMDAr encephalitis.<sup>8</sup> Therefore, psychiatrists should maintain broad differential diagnoses and a low threshold to assess vital signs and perform neurologic examinations. Diagnosis and treatment of anti-NMDAr encephalitis are described elsewhere.<sup>9,10</sup> The characteristic behavior and motor symptoms of catatonia are assessed and monitored using the Bush-Francis Catatonia Rating Scale (BFCRS).<sup>11</sup> To promote early recognition, assessment, and treatment of catatonia, we offer documentation (Video) and descriptions of symptoms (Table 1) displayed by our patient organized according to the BFCRS.

## Article Information

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Table 1.

## Description of the Patient's Symptoms Organized According to the Bush-Francis Catatonia Rating Scale

Bush-Francis Catatonia Rating Scale Item	Video Timepoint	Additional Notes From Hospital Course
<b>Excitement</b>	...	Walking and moving around the hospital room with no purpose in the middle of the night and during the day
<b>Immobility/stupor</b>	...	Sitting with legs crossed and arms stiffly by side, not moving for many seconds/minutes
<b>Mutism</b>	...	Not responding to questions during interview; disengaging from conversations for prolonged periods of time; answering in incomprehensible whisper
<b>Staring</b>	0:33–1:11, 2:45–3:24	Staring at doors, ceilings, walls, hospital staff, and family
<b>Posturing/cataplexy</b>	0:33–0:53	Positioning neck in an overextended position; assuming abnormal positions and maintaining them for prolonged periods of time in hospital bed and chair
<b>Grimacing</b>	0:54–1:11	Exhibiting and maintaining facial expressions normally associated with intense pain, disgust, or terror
<b>Echopraxia/echolalia</b>	2:04–2:44	Mimicking behaviors and repeating words of others, including spouse and hospital staff
<b>Stereotypy</b>		Repeating behaviors, such as finger-tapping and sitting on hands while shrugging shoulders
<b>Mannerisms</b>	1:35–2:03	Exhibiting seemingly exaggerated behaviors, such as moving lips to sound out words and random outbursts including “power puff girls unite!”
<b>Verbigeration</b>	3:10–3:24	Repeating statements regardless of feedback or response from others, such as “and?”
<b>Rigidity</b>	...	Sitting with legs crossed and arms tightly by side and resistant to repositioning; recurring report of neck stiffness and pain on interview and physical examination
<b>Negativism</b>	1:31–2:03	Displaying verbal or motor refusal, resistance, or opposition to instruction, request, or questions, such as not answering “What’s your name?”; stiffening body when asked to relax; and dropping arm when asked to hold up arm
<b>Waxy flexibility absent in symptom course</b>		
<b>Withdrawal</b>	...	Refusing food and water over multiple days; making poor eye contact; not acknowledging presence of others in the room
<b>Impulsivity</b>	...	Attempting to pull out access line; leaving the room to look for husband in middle of the night; requesting husband to help escape from the hospital
<b>Automatic obedience</b>	...	Mechanically cooperating with examiner’s requests during physical examination on some days of hospitalization
<b>Mitgehen<sup>a</sup></b>	...	Elevating her extended arms in response to light pressure on the hands, despite orders to not raise her arms
<b>Gegenhalten<sup>b</sup> and ambitendency absent in symptom course</b>		
<b>Grasp reflex</b>	...	Flexing her fingers when the examiner put pressure on palm
<b>Perseveration</b>	1:12–1:30 2:45–3:09	Fixating or repeating a behavior or statement even after the conversation has moved on or ended, such as “you said a promise”
<b>Combateness</b>	...	Resisting others trying to prevent attempts to pull out access lines
<b>Autonomic instability</b>	...	High and/or low blood pressure and/or pulse; in this patient, there was a tendency to maintain low blood pressures (87–115 mm Hg)/ (58–93 mm Hg)

<sup>a</sup>“To resist or go against” in German; refers to resistance to passive movement that appears involuntary and increases with repeated stimulus despite contrary instructions from the examiner.

<sup>b</sup>“To go with” in German; refers to raising of arm in response to light pressure from the examiner’s finger despite instructions from the examiner to not raise arm.

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