

Recurrent Catatonia Following Radiation-Induced Hypothyroidism

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Catatonia is characterized by dysregulation in movement and communication. Seen typically secondary to schizophrenia and other psychotic disorders, catatonia may also be associated with conditions ranging from mood disorders to medical conditions.¹ Multiple neurological pathways are implicated, with impairment to γ -aminobutyric acid, serotonergic, dopamine, and glutamate transmission.² As defined by the *DSM-5*, symptoms include catalepsy, waxy flexibility, stupor, agitation, mutism, negativism, posturing, mannerisms, stereotypies, grimacing, echolalia, and echopraxia, of which only 3 need to be present for a formal diagnosis.³ In clinical practice, the overlapping Bush-Francis Catatonia Rating Scale (BFCRS) is commonly used, with higher scores corresponding to higher suspicion.⁴ If catatonia is suspected, a one-time 1- to 2-mg lorazepam challenge is given; this is both therapeutic and diagnostic, and response can be seen within minutes to hours. Repeat benzodiazepines can be given for further effect. Electroconvulsive therapy can be used in treatment-refractory patients. Rare cases have shown thyroid dysfunction with catatonia, and hypothyroidism has been shown to lead to broader neuropsychiatric symptoms.^{5,6} We illustrate a novel case where hypothyroidism and catatonia appear linked.

Case Report

A 41-year-old woman with a history of long-standing schizophrenia, catatonia, and hypothyroidism status post radioactive ablation (10 years ago) presented to the emergency department for not eating or drinking

over the past 3 days. Upon arrival, her BFCRS score was 17/23, thyroid-stimulating hormone (TSH) level was 40.99 mU/L (normal: 0.4–4.0 mU/L), and free T4 was 0.4 ng/dL (normal: 0.8–1.8 ng/dL). She was mute and unresponsive to commands, and her gaze was fixed with poor eye contact. Catatonia was suspected, and a 2-mg intravenous (IV) lorazepam challenge was initiated. Within the hour, a positive response was noted, and the next day, her BFCRS score was 5/23.

She was admitted to the medicine floor, where IV levothyroxine was given for severe hypothyroidism, and she was found to have paranoia, thought blocking, and grossly impaired hygiene/grooming. She was thereafter transferred to the inpatient psychiatry unit, where her schizophrenia and catatonia were stabilized following additional lorazepam doses, haloperidol, and divalproex sodium. She was discharged to a long-term care facility, given these recurrent catatonic hospitalizations and concern that she was no longer able to take care of herself. Of note, the patient had 2 exactly similar presentations (requiring lorazepam and levothyroxine) over the past year. Both were diagnosed as catatonia-schizophrenia type with severe hypothyroidism (TSH levels between 23 and 35 mU/L).

Discussion

Catatonic patients with medical diagnoses requiring strict medication regimens present a unique practical challenge. In many scenarios, patients may not have oral intake or be able to give consent for medications.⁷ Especially for patients with chronic hypothyroidism, this

challenge can be magnified, given the unclear relationship between episodes of hypothyroidism and catatonia. Is hypothyroidism exacerbated by an inability to take medications because of the catatonia? Or is the catatonia precipitated by long-standing hypothyroidism? Both likely played a role for this patient, given that the radioactive ablation was performed years before the catatonia started recurring. Regardless, clinicians may consider screening thyroid function in catatonic patients since it may be a barrier to successful treatment. Furthermore, hypothyroidism-induced psychosis is a well-established phenomenon, commonly known as “myxedema madness.”⁸ Likewise, psychotic conditions such as schizophrenia are classically seen with catatonia. Bridging this gap to elicit the exact mechanism between thyroid dysfunction and catatonia is of high interest. In the meantime, clinicians should be aware of how to manage both when they present concurrently.

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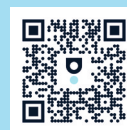
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