

Neuropsychiatric Features of Untreated Secondary Hypothyroidism

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Keywords: Hypothyroidism, Executive Dysfunction, Central Hypothyroidism

Published: 22 November 2024

The overlap between psychiatric and endocrine pathology is has been well described in the literature and treatment modalities for both types of disorders can affect the presentations of either type of condition. Thyroid pathology in particular has many overlapping symptoms with psychiatric disorders including mood and anxiety disorders, but neuropsychiatric symptoms in untreated hypothyroidism have also been documented. There have even been some cases where the patient's presentation is otherwise atypical or lacking other common clinical features of thyroid pathology. Furthermore, the barriers to timely diagnosis to less common forms of thyroid hypofunction including central/secondary hypothyroidism can cause diagnostic confusion, especially when many of the present signs/symptoms have the potential to overlap significantly with neuropsychiatric or psychiatric pathology. Here we describe a case of possible neuropsychiatric sequelae to secondary/central hypothyroidism without panhypopituitarism or evidence of pituitary or hypothalamic lesions on MRI. Our patient is a 31-year-old male with a history of anxiety and severe refractory major depressive disorder now in remission who is currently presenting with verbal processing speed delays and executive dysfunction. The patient had been trialed on multiple different psychiatric treatment modalities including antidepressants, antipsychotics, mood stabilizing medications, as well as off-label treatments including liothyronine, which was noted to be partially helpful. The patient had also undergone ECT and, due to concerns of persistent cognitive sequelae following completion of ECT treatment, had prompted a referral for formal neuropsychological assessment. On neuropsychological testing, the patient demonstrated significant delays in processing speed and executive dysfunction, which affected his speech, as well as his ability to process incoming verbal information. There was also evidence of delayed verbal consolidation. Visual memory was noted to be intact. The patient had multiple abnormal thyroid assays noted for the past few years and had been treated with liothyronine for depressive symptoms with some benefit but had not been formally assessed for secondary/central hypothyroidism or had an evaluation by an endocrinologist. TSH and FT4 had both been abnormally low and he was recommended to follow with his PCP for a trial off liothyronine and undergo subsequent retesting thyroid levels afterward. A referral was sent to endocrinology at the patient's most recent psychiatry follow up visit after discussion with the patient given multiple tests concerning for possible secondary hypothyroidism and the potential for an atypical presentation of that condition to contribute to his noted cognitive/executive dysfunction. The

patient displayed noted delays in several areas on his previous neuropsychiatric testing that have been previously documented in cases of otherwise atypically presenting hypothyroidism. The overlapping symptomatology, interconnected physiology, and neuroendocrine context of psychiatric and endocrine disorders should be considered by all clinicians, regardless of their specialty. In describing this case, we seek to promote awareness and broaden the clinical context of practitioners in all related specialties.

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