DOI: 10.7860/JCDR/2026/86164.23530

Case Report

Psychiatry/Mental Health Section

A Case Report of Myxoedema Psychosis in a 25-year-old Female

ADITHYA BISWAS[1], KAILASH SURESHKUMAR[2], SHABEEBA Z KAILASH[3], ARAVINDH MANOGARAN[4], S NIVEDITA[5]

ABSTRACT

Hypothyroidism is a medical disorder of thyroid hormone deficiency which can manifest with a range of somatic and psychological disturbances. This case highlights the rarer manifestation of psychotic symptoms in a patient with hypothyroidism which is known to typically manifest with depressive and/or anxious psychiatric symptomatology. The following report discusses a case of a young adult married house-wife from a semiurban setting presented with history of irritability, aggressive and odd behaviours, hearing voices, suspiciousness with irregular sleep in an on/off manner for 10 days duration coinciding with a period of irregularity in her hypothyroid medication use. Upon mental status examination signs of poor self-care, gaze avoidance, increased psychomotor activity and speech rates were noted alongside referential and persecutory delusions and beckoning secondary auditory hallucinations. Insight of grade 3 and poor judgement. The patient was assessed by serial applications of the Brief Psychiatric Rating Scale (BPRS) showing an improvement from across the span of four days of re-initiation of long-term thyroid medication under the cover of short-term antipsychotics and psychotherapy. This case exemplifies the acute nature of psychotic symptoms that can manifest in hypothyroidism, with some instances having psychotic features as the presenting complaints. Maintaining a high index of suspicion to enable early identification is important. An improvement in patient's condition was noted in response to thyroid level assessment and reinforcement of medication use. Appropriate psychopharmacological and psychotherapeutic interventions contributed to the patient's acute improvement which highlights the need for discussing such cases.

Keywords: Delusions, Hallucinations, Levothyroxine, Organic mental disorders, Psychotic disorders, Thyroid function tests

CASE REPORT

A 25-year-old female who was reportedly normal around five days prior with adequate sleep and appetite presented with chief complaints of irregular sleep patterns and increased irritability for the past four days which then progressed to bouts of aggressive behaviour over trivial matters such as delays in household work completion. She started to refuse performing her own household chores with diminished interest in caring for her daughter and suspicion towards her husband and neighbours with the idea that they were trying to poison her food and steal her things. The patient had a known past history of hypothyroidism diagnosed four years prior last prescribed and maintained on 100 µg of levothyroxine daily with irregularity in medication, being off medication for the past six months. There was history of easy fatigability and (unintentional) weight gain of 10 kg across the preceding 45 days. The patient also has a history of lower segment caesarean section two years prior after failed induction of labour for her firstborn child.

Examination revealed pallor being present. Her mental status assessment on admission revealed that she was conscious and oriented to time/place and person. Poorly kempt, not sustaining eye contact with difficulty in establishing rapport, increased psychomotor activity and increased speech rate with delusional thoughts of reference and persecution being present and vague on/off second person auditory hallucinations of voices calling out to her that caused her much distress with poor insight and judgement. The patient was unmanageable in a home environment by her husband and housemates and hence warranted admission, especially in light of there being a two-year old child at home (her behaviours and negligence posing a risk to her upbringing); thus was admitted and baseline investigations were ordered including complete blood counts and iron profile, liver function tests, serum electrolyte levels and fasting lipid tests were sent, including a thyroid function panel - BPRS score [1] =69/126 at time of admission. The patient was revealed to have Thyroid Stimulating Hormone (TSH) values of 128.97 µIU/mL (normal range=0.34-4.50 µIU/mL), alongside a Free Tri-iodothyronine value of 2.13 pg/mL (normal range = 2.5-3.9 pg/ mL) and Free Tetra-iodothyronine value of 0.26 ng/dL (normal range=0.58-1.64 ng/dL) [Table/Fig-1], with associated normal ranges provided based on institutional standard ranges for each test. Acute and transient psychotic disorder was considered as the differential diagnosis, assigned initially at the time of admission. Upon further assessment and through the course of admission this was modified to the final diagnosis of secondary psychotic syndrome, with delusions and hallucinations in light of the temporal correlation with onset of hypothyroidism. The modification was based on psychotic features having temporal correlation with the discontinuation of thyroid medication and manifestation of hypothyroid features as one of the early markers of hypothyroidism in presentation.

The patient was started on risperidone 2 mg, clonazepam 0.5 mg and after reviewing with a general medicine opinion was

Lab investigation	Results	Normal value
Thyroid function tests		
Free Tri-iodothyronine (pg/mL)	2.13	2.50-3.90
Free Tetra-iodothyronine (ng/dL)	0.26	0.58-1.64
Thyroid stimulating hormone (µIU/mL) Thyroid stimulating hormone (µIU/mL)	128.97	0.34-4.50
Complete blood count		
Total leukocyte count (cells/µL)	12,000	4,000-10,000
Red blood cell count (millions cells/µL)	4.84	3.80-4.80
Haemoglobin (g/dL)	10.70	12-15
Haematocrit (%)	33.60	36-46
Mean corpuscular volume (fL)	70	83-101
Mean corpuscular haemoglobin (pg)	22.10	27-32
Mean corpuscular haemoglobin concentration (g/dL)	31.80	31.5-34.5
Red cell distribution width (%)	19.80	11.60-14.00

Reticulocyte count (%)	3.40	0.50-2.50
Platelet count (lakh cells/μL)	2.72	1.50-4.10
Differential count		
Neutrophil (%)	71.60	40-80
Eosinophil (%)	1.80	1-6
Basophil (%)	0.30	0-2
Lymphocyte (%)	21.80	20-40
Monocyte (%)	4.50	2-10
Iron profile		
Serum iron (μg/dL)	41	50-170
Total iron binding capacity (μg/dL)	306	250-450
Ferritin (ng/mL)	41.4	11-306.80
Folic acid (ng/mL)	2.56	>6.59
Vitamin B12 (pg/mL)	>1500	180-914
Fasting lipid profile		
Total cholesterol (mg/dL)	172	<200
Triglycerides (mg/dL)	94	<150
High-density lipoprotein (HDL) (mg/dL)	41	>50
Low-density lipoprotein (mg/dL)	113	<130
Very low-density lipoprotein (mg/dL)	18	2-30
Cholesterol: HDL ratio	4.2:1	<4:1

[Table/Fig-1]: Laboratory findings of the patient.

re-started on an appropriate dose of Levothyroxine [2] for her level of thyroid dysfunction of a 125 μg morning dose on an empty stomach. The patient showed rapid improvement within the first two days of admission being kept away from her stressors as well as free from the burden of home care. She was simultaneously initiated on individual psychotherapy to assess and address her personal stressors, by first identifying them and identifying maladaptive mechanisms and cognitions that had begun to develop.

She was discharged upon symptomatic improvement after four days with a BPRS score of 24/126 and was followed-up for psychotherapeutic and medical intervention with no further episodes noted since. The patient was regular to attend follow-up and antipsychotics were tapered after four months of symptom-free period.

DISCUSSION

Hypothyroidism is an endocrinological disorder that has been documented to have a high prevalence of up to 12.5% in young women from South Indian population [3]. It is observed with a variety of both somatic complaints and psychological disturbances that tend to be age-dependent [4]. Thyroid hormones are known to regulate multiple Central Nervous System (CNS) and allied functions in the human body. Thyroid hormonal dysregulation is known to be associated with psychiatric co-morbidity such as anxious and depressive illness being more common in hypothyroid conditions. Myxoedema Psychosis however is a relatively uncommon consequence of hypothyroidism often secondary to an under-active thyroid gland [5]. As Psychiatrists it is important to be conscious of the potential for thyroid disease to be a major aetiological factor in several common mental illnesses and hence a high index of suspicion should be maintained. A case report by Parikh N et al., highlights a similar case with grossly elevated TSH values and prominent psychotic features was managed with use of risperidone as the antipsychotic drug of choice with a background of levothyroxine coverage for the hypothyroidism yielding similar improvement and positive outcomes [6].

The common psychiatric complaints include cognitive dysfunction, affective disorders and sometimes psychotic changes. The mental status evaluation of a hypothyroid patient would reveal a wide range of dysfunctional changes from mild attentional impairment to significant agitated delirium or psychosis. Consequently, myxoedema psychosis can be difficult to identify with the variable nature of its presentation. Hypothyroidism is an important predisposing, precipitating and perpetuating factor for psychiatric illnesses that are observed in a day-to-day setting [4]. Symptom severity was measured using the BPRS, an 18-item clinician-rated instrument originally developed by Overall JE and Gorham DR (1962) to assess psychiatric symptomatology on a 7-point severity scale. The original version is in the public domain and was used in this study [1].

This particular case highlights that even acute psychotic manifestations can also be secondary to thyroid dysfunction. For those with higher epidemiological risk factors like women with history of weight gain and irregular menstrual cycles one should be even more vigilant and consider thyroid function testing as a routine standard [7]. The patient presented with both features of hypothyroidism and frank psychosis - the presence of delusions and hallucinations with fewer signs of affective change. They benefitted from early intervention on both fronts including prompt and apt correction of her hypothyroidism flare-up as well as acute phase psychiatric care by both brief antipsychotic use and psychotherapeutic intervention [8].

Every patient presenting with psychotic features having signs of symptoms that may induce suspicion of hypothyroidism are recommended to have their thyroid investigations work-up to minimise the risk of starting the patient on unnecessary long-term course of antipsychotic medication. This case displays the potentially reversible nature of psychosis in hypothyroidism [2].

CONCLUSION(S)

The case report demonstrates the potential for psychotic symptoms to be key presenting features in patients of hypothyroidism. A high index of suspicion of thyroid dysfunction in patients attending the psychiatry OPD as well as regular Thyroid Function Testing can help detect dysfunction and improve outcomes in psychotic patients.

REFERENCES

[1] Overall JE, Gorham DR. The Brief Psychiatric Rating Scale. Psychological Reports [Internet]. 1962 Jun [cited 2025 Dec 14];10(3):799-812.
[2] Moeller KE, Goswami R, Larsen LM. Myxedema madness rapidly reversed with levothyroxine. J Clin Psychiatry. 2009;70(11):1607-08. Doi: 10.4088/JCP.08l04958yel. PMID: 20031108.
[3] Velayutham K, Selvan SS, Unnikrishnan AG. Prevalence of thyroid dysfunction among young females in a South Indian population. Indian J Endocrinol Metab. 2015;19(6):781-84. Doi: 10.4103/2230-8210.167546. PMID: 26693428; PMCID: PMC4673806.
[4] Heinrich TW, Grahm G. Hypothyroidism presenting as psychosis: Myxedema madness revisited. Prim Care Companion J Clin Psychiatry. 2003;5(6):260-66. Doi: 10.4088/pcc.v05n0603. PMID: 15213796; PMCID: PMC419396.
[5] Krüger J, Kraschewski A, Jockers-Scherübl MC. Myxedema madness - Systematic literature review of published case reports. Gen Hosp Psychiatry. 2021;72:102-16. Doi: 10.1016/j.genhosppsych.2021.08.005. Epub 2021 Aug 14. PMID: 34419786.
[6] Parikh N, Sharma P, Parmar C. A case report on myxedema madness: Curable psychosis. Indian J Psychol Med. 2014;36(1):80-81. Doi: 10.4103/0253-7176.127260. PMID: 24701017; PMCID: PMC3959026.
[7] Giunio Zorkin N, Golts M, Fernandes VC. Severe hypothyroidism presenting with acute mania and psychosis: A case report and literature review. Bipolar Disorder: Open Access [Internet]. 2017 [cited 2025 Dec 20];03(01). Doi:10.4172/2472-1077.1000116
[8] Omri M, Ferhi M, Lentz N, Oliveira Galvao M, Hamm O. Myxedema psychosis: Diagnostic challenges and management strategies in hypothyroidism-induced psychosis. Cureus. 2024;16(3):e57259. Doi: 10.7759/cureus.57259. PMID: 38686274; PMCID: PMC11056817.

PARTICULARS OF CONTRIBUTORS:
1. Postgraduate Student, Department of Psychiatry, Chettinad Hospital and Research Institute, Chennai, Tamil Nadu, India.
2. Professor and Head, Department of Psychiatry, Chettinad Hospital and Research Institute, Chennai, Tamil Nadu, India.
3. Associate Professor, Department of Psychiatry, Chettinad Hospital and Research Institute, Chennai, Tamil Nadu, India.
4. Assistant Professor, Department of Psychiatry, Chettinad Hospital and Research Institute, Chennai, Tamil Nadu, India.
5. Senior Resident, Department of Psychiatry, Chettinad Hospital and Research Institute, Chennai, Tamil Nadu, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Kailash Sureshkumar,
Professor and Head, Department of Psychiatry, Chettinad Hospital and Research Institute, Chettinad Health City, Rajiv Gandhi Salai, 603103, Chennai, Tamil Nadu, India.
E-mail: kaidoc02@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Jan 01, 2026
- Manual Googling: Apr 02, 2026
- iThenticate Software: Apr 04, 2026 (1%)

ETYMOLOGY: Author Origin

EMENDATIONS: 7

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Dec 31, 2025**
Date of Peer Review: **Jan 19, 2026**
Date of Acceptance: **Apr 06, 2026**
Date of Publishing: **Jun 01, 2026**