

## Case Report

# Psychosis as the sole presenting feature of hyperthyroidism: a case report

Vinay Tuteja, C. L. Nawal, Aradhana Singh, R. S. Chejara,  
Rajbeer Singh\*, Siddharth Chouhan

Department of Medicine, SMS Medical College, Jaipur, Rajasthan, India

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**\*Correspondence:**

Dr. Rajbeer Singh,

E-mail: [rajsnmc06@gmail.com](mailto:rajsnmc06@gmail.com)

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### ABSTRACT

Thyroid disease is a very common entity with a wide range of presentation, We report a case of twenty six year old female presented to emergency room with frank psychosis over the course of her stay in hospital we investigated thoroughly and finally she turned out to be a case of hyperthyroidism with psychosis as the only presenting symptom and after starting her on carbimazole patient responded to the treatment remarkably.

**Keywords:** Hyperthyroidism, Psychosis, Thyrotoxicosis

### INTRODUCTION

Thyroid diseases are commonly associated with neurological as well as psychiatric feature, these features are more common with hypothyroidism.

A variety of conditions can cause hyperthyroidism as grave's disease (an autoimmune disorder), excess iodine, thyroiditis, tumors of the ovaries or testes, benign tumors of the thyroid or pituitary gland and through dietary supplements or medication.

Patients with hyperthyroidism usually presents with restlessness, palpitations, weight loss, anxiety, lack of concentration, loss of memory, and difficulty in doing day to day work.<sup>1</sup>

Less commonly patients with thyroid disease may develop seizures, movement disorders or catatonia and only 1% may develop psychosis's crisis.<sup>2</sup> These neurological manifestations are known as Hashimoto's encephalopathy (HE) and it is present in patients with

subclinical hypothyroidism, euthyroidism, and overt hypothyroidism but can also appear in patients with hyperthyroidism.<sup>3</sup>

Psychosis is a rare complication in hyperthyroidism, most patients who develop psychosis are commonly diagnosed as mania and/or delirium and leads to unnecessary prescription of antipsychotics and sedatives.<sup>4</sup>

### CASE REPORT

A young female presented to emergency room of Sawai Man Singh hospital with the complaints of low grade fever for 10 days, abnormal behaviour, bed wetting, decreased sleep, loss of appetite and abnormal body movements (catatonia) with no significant history of any chronic disease like any thyroid disorder, diabetes mellitus, hypertension etc.

Patient initial physical examination included the following vital signs: blood pressure 127/82mmHg, heart rate 117beats/min, respiratory rate 22breaths/min,

temperature 37.9 degree celsius, and oxygen saturation 100% on room air. With such a presentation the first diagnosis kept was any CNS infection for which we investigated patient thoroughly and started with routine blood investigation and other common cause of fever as Dengue and malaria (Table 1) also to rule out any encephalitis or an organic brain lesion we did a CSF study, MRI brain but to our surprise all these investigations came out to be in normal range. With stuck in diagnostic dilemma we thought of unusual causes of psychosis and ordered ANA, urine porphyria and serum copper levels but all of these tests came out negative. With keeping in mind the young age and tachycardia with psychosis as the major feature we did a thyroid hormone profile which revealed state of thyrotoxicosis with free T3-11.33pg/ml, freeT4-3.02ng/ml, T.S.H.-<0.00 and anti TPOab-1094.7IU/ml. USG neck revealed bilateral thyroiditis. Patient was immediately started on Tab. carbimazole 20mg b.d and Tab propranolol 40mg b.d, within a couple of days patients general condition improved with significant improvement in comprehension and bladder control and patient was discharged after four days in much better condition.

**Table 1: Routine investigations.**

Serum level investigation	Level
Random blood sugar	90mg/dl
Serum creatinine	0.95mg/dl
Serum urea	35mg/dl
Sodium	138mMol/l
S.G.O.T	32 U/L
S.G.P.T	37 U/L
Haemoglobin	9.1gm/dl
T.L.C	5.6*1000/mm <sup>3</sup>

## DISCUSSION

Hyperthyroidism is characterised by raised serum concentrations of thyroxine (T4), tri iodothyronine (T3) and low serum thyroid-stimulating hormone (TSH) concentrations. Whereas subclinical hyperthyroidism has following hormonal profile; low serum TSH, but normal serum T4 and T3 concentrations.<sup>5</sup>

Elevated serum T4 and T3 levels raises catecholamine signalling via increased numbers of beta-adrenergic receptors. The resulting symptoms (e.g., palpitations, heat intolerance, diaphoresis, and tremor) are due to adrenergic surge and these are most common manifestations of hyperthyroidism.<sup>6</sup>

Psychosis associated with thyrotoxicosis/hyperthyroidism is very unusual. In contrast, psychiatric manifestations are commonly associated with myxedema.<sup>7</sup> However, thyrotoxicosis by itself can aggravate the psychiatric manifestations.<sup>8</sup> Psychosis crisis must be evaluated thoroughly for common diseases as trauma, autoimmune diseases, drugs, iatrogenic causes, cerebrovascular

accidents, malignancies, congenital disorders, metabolic disturbances (electrolytes, glucose levels), sepsis, neurological infections, Addison disease, hyperparathyroidism, temporal lobe epilepsy, and schizophrenia.<sup>9,10</sup>

Thyroid hormones play an important role in the regulation of mood and the spectrum of neuropsychiatric features associated with thyroid diseases can be very wide.<sup>11</sup>

The therapeutic approaches to hyperthyroidism are antithyroid drugs (ATD), surgery and radioactive iodine (RAI). Carbimazole and propylthiouracil are antithyroid drugs that are effective in reducing the production of thyroid hormones in the majority of people with hyperthyroidism.<sup>12-14</sup>

In this case also patient presented with full blown features of a psychiatric disorder and multistep approach lead to the diagnosis of a very common disease with an unusual presenting feature.

## CONCLUSION

It is important to remember that an atypical presentation of a commonly occurring disease is far more common than a rare disease. Psychosis can be an uncommon presenting feature of a very common disease so it must be thoroughly investigated prior to labelling the disease as a psychiatric disorder.

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