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CASE REPORT

Apathetic hyperthyroidism presenting as conversion disorder: a case report

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ABSTRACT

Background: Thyroid storm is a life-threatening health condition associated with hyperthyroidism. Apathetic hyperthyroidism is an atypical presentation of the thyrotoxicosis spectrum; this atypical presentation of apathetic thyroid storm makes the diagnosis of thyroid storm more challenging.

Case Presentation: A previously healthy 23-year-old female presented to the emergency department with a 3-hour history of inability to talk or move limbs. Initial clinical examination showed that patient was conscious, alert, and febrile, with no external rashes or neck stiffness but was unable to move all limbs. Increased reflexes in all four limbs with no clonus and no rigidity was found. There was no sign of stroke in computed tomography scan, and other neurological assessments were normal. Cardiac examination showed persistent sinus tachycardia reaching 160 heartbeats per minute, despite antipyretic and fluid treatment. This finding raised the suspicion of hyperthyroidism and thyrotoxicosis. Thyroid function test revealed thyroid stimulating hormone level of 0.005 µIU/ml, free thyroxine >100, and free triiodothyronine of 41. Patient was admitted and treatment of anti-thyroid medication, steroid, and beta-blocker was initiated. The condition improved and patient was discharged home.

Conclusion: The diagnosis of apathetic hyperthyroidism is difficult and sometimes delayed owing to its atypical presentation. The patient could potentially quietly sink into coma, if high index of suspicion is not maintained.

Keywords: Thyroid storm, conversion disorder, endocrine emergency, hyperthyroidism, apathetic hyperthyroidism.

Introduction

Thyroid storm is a rare yet life-threatening condition, caused by the excessive release of thyroid hormone, with mortality rate reaching up to 80%-100% if left untreated [1]. It is usually presented with agitation, hyperthermia, tachycardia (often out of proportion to fever), and altered mental status. Life threatening complications observed are congestive heart failure, cardiac dysrhythmia (such as atrial fibrillation), respiratory failure, hypovolemia secondary to diarrhea, and multi-organ dysfunction.

Apathetic hyperthyroidism is an atypical presentation of the thyrotoxicosis spectrum. Apathetic thyrotoxicosis, as a distinct entity, was first described by Lahey [2] and subsequently by others. It is more commonly seen in elderly patients, where patient presented with apathy and depressed symptoms rather than classical irritability as seen in thyroid storm. Most of the times, it is mistakenly diagnosed as a primary psychiatric disorder.

Case Presentation

A previously healthy 23-year-old female of East Asian ethnicity was presented to the Emergency Department (ED) with a 3-hour history of inability to talk and move limbs followed by one episode of vomiting. Patients' initial vitals were 39.6°C temperature, heart rate of 110 bpm, blood pressure 129/74 mmHg, oxygen saturation was 99% at room air, and point of care glucose was 73 mg/dl. The patient was febrile, conscious and alert with teary eyes.

Initial clinical examination showed that patient was conscious, alert, tearing up, febrile, with no external rashes or neck stiffness, and no visible jaundice, but was unable to move all limbs. Increased reflexes in all four limbs with no clonus and no rigidity was observed.

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The rest of the physical examinations of the patient such as head, ear, nose, throat, chest, cardiovascular, and abdomen were normal. Neurological bedside assessment was functional, non-neurological cause of the weakness was first diagnosed as stroke (locked-in syndrome) and a central nervous system infection such as meningoencephalitis. Accordingly, the code stroke protocol at the Rashid Hospital was followed and the patient was shifted for a computed tomography (CT) brain along with an urgent neurology consultation. A CT brain with cerebral angiogram was done and where no acute hemorrhage or ischemic infarction was seen. Further history was obtained, which revealed that the patient was previously well, and all of her symptoms started suddenly after an emotional conversation with her mother over the phone. They denied history of fever, recent flu-like illness, urinary or bowel complaints, or trauma. During the patients' stay in the ED, patient tried to move lips. However, the patient could not produce any sound. The patient was able to nod when asked questions, and was also able to slowly raise limbs against gravity upon command with persistent psychological support.

After receiving intravenous paracetamol, the patients' symptoms started to show mild improvement, but the patient had persistent tachycardia up to 160 bpm on the cardiac monitor. A 12-lead electrocardiography was done and showed sinus tachycardia. Initial blood tests were done which included complete blood count, urea and electrolyte levels, serum creatinine level, liver function test, cardiac markers, inflammatory markers, and lactic acid, which were all normal. A thyroid function test was also conducted concerning the persistent tachycardia of the patient in the absence of other identifiable causes. The results indicated thyroid stimulating hormone <0.005 (Ref. 0.3-4.2), Free thyroxine >100 (Ref .11-22), Free triiodothyronine of 41 (Ref. 2.8-7.1).

Burch-Wartofsky Point Scale for thyrotoxicosis scores 60 points, which is highly suggestive of thyroid storm.

The patient was referred to the internal medicine department as a case of apathetic thyroid storm. Further history of unintentional weight loss of more than 10 kgs over the past one year was obtained, in addition to palpitations and fine tremors for the same duration. The patient was admitted in the intensive care unit and was started on carbimazole, propranolol, and hydrocortisone. An ultrasound of the thyroid gland was done, which was showed an enlarged thyroid gland with a slightly heterogenous echotexture and a diffuse micronodular pattern with markedly increased vascularity on the color doppler examination. In addition, the isthmus was slightly thickened and cervical lymph nodes were slightly enlarged bilaterally. The mentioned findings on thyroid ultrasound were suggestive of acute thyroiditis. During the period of hospital stay, patient's condition improved and was discharged home.

Discussion

Apathetic thyrotoxicosis is an atypical manifestation of hyperthyroidism, which is uncommon in young healthy adults. The key features are apathy and depression, as opposed to hyperkinesis and mental alertness in the usual thyrotoxic patient, and are unassociated with the usual signs and symptoms of hyperthyroidism, making the diagnosis challenging [3].

This type of hyperthyroidism chiefly affects the heart, which produces unexplained or refractory heart failure, arrhythmias, sustained, or paroxysmal atrial fibrillation, in addition to unexplained weight loss, fatigue, apathy, placid, or depressed appearance, and is most common in the elderly. Although, there are some case reports of apathetic thyrotoxicosis in the younger age group [2-10]. However, the typical thyrotoxicosis signs related to eyes are strikingly absent, and also the thyroid enlargement [3]. This absence of the typical signs and symptoms of thyrotoxicosis might cause the diagnosis to be missed.

It is important to emphasize that these patients do not appear extremely ill under usual conditions but might quietly and peacefully sink into coma and die a relaxed death without activation under stress, unlike the classic thyrotoxic patient who goes into crisis [4].

The pathophysiologic events leading to a state of apathy and depression in these patients are not known. A widely held hypothesis is that depression leads to the deficiency of brain biogenic amines, mainly the catecholamines, noradrenaline, and dopamine [5].

Conclusion

The variation of apathetic hyperthyroidism might go unnoticed, and the patient could potentially quietly sink into coma if high index of suspicion is not maintained. Thus, the key to decrease morbidity and mortality rates associated with thyroid storm is early diagnosis and treatment.

List of Abbreviations

CT	Computed tomography
ED	Emergency department
TSH	Thyroid stimulating hormone
T4	Thyroxine
T3	Triiodothyronine

Conflict of interests

The authors declared that there is no conflict of interest regarding the publication of this case report.

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Consent for publication

Informed consent was obtained from the patient.

Ethical approval

Ethical approval is not required in our institution for an anonymous case report.

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