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Atypical Presentations of Thyrotoxicosis

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Abstract

Recognition of atypical features of thyrotoxicosis is quite rewarding as early diagnosis and treatment can prevent many complications. At times, it becomes very difficult to treat a co-morbidity without achieving euthyroid state. Unusual and rare features of thyrotoxicosis are been framed in a format that is often encountered by the clinician. Features that help in suspecting the disease and in differentiating it from other diseases have been elaborated.

Keywords: Thyrotoxicosis; Adrenergic Stimulation

Introduction

Easy availability of the sensitive and reliable thyroid function tests has highlighted the many and protean manifestations of the thyroid function disorders. There is paucity of literature and awareness about the unusual clinical features of thyrotoxicosis. Atypical presentations, more common in, but not exclusive to elderly, are often diagnosed incidentally. The diagnosis becomes elusive and tenuous when the clinical picture is converse to usual signs and symptoms. Patients of this age group often have plethora of difficult to treat chronic co- morbidities. With awareness, identification and correction of a hitherto overlooked associated thyroid disorder can be very rewarding and can easily give a lease of useful life and prevent many complications. Based on the observation that 12.6% of elderly patients admitted in Internal Medicine Division of a hospital had previously unrecognized thyroid function disorder, a recommendation has been made to screen all elderly hospitalized patients for the disease [1].

Atypical manifestations of thyrotoxicosis can be categorized to following scenarios:

- Thyrotoxicosis has surfaced with main signs and symptoms confined to one body system and usual features of adrenergic stimulation are subtle.
- There is another prominent co-morbidity which eclipses the delicate features of thyrotoxicosis.
- Decompensation of previously stable systemic disease for no obvious reason.
- When findings are converse to the usual clinical features of adrenergic stimulation.
- Atypical or rare features with lack of specificity.
- Disease of recent onset.
- Some abnormal lab reports not specific of thyroid disorder.
- Features of Graves' disease but normal thyroid function tests.

These presentations extracted from sporadic case reports can be comprehended better if framed in a body system format. Accordingly, these are summarized as below:

Behavioral and Neurological Manifestations: Not infrequently, thyrotoxicosis shows up with behavioral changes. Patient may have tendency to anger easily [2]. One often speaks rapidly as if the words are rushing into each other. They may complain of bad dreams and inability to fall asleep. Lack of concentration and feeling of fatigue and exhaustion may be other features. Thyrotoxicosis may also herald as major psychosis [3]. Patient can have paranoid ideas, hallucinations, and impairment of cognition and panic

attacks.

Apathetic thyrotoxicosis is seen mainly, but not necessarily, in elderly patients. Instead of being hyperactive they are lazy and exhausted and the diagnosis may be confused with depression. Thyroid gland is often not enlarged. One may be prompted to prescribe antidepressants to these patients. This may be harmful and bares them to the risk of cardiotoxicity of the drug. Patients can also present in altered sensorium or frank coma. These symptoms abate with the treatment of thyrotoxicosis. Features differentiating psychiatric disease from thyrotoxicosis are depicted in Table 1.

Psychiatric Disease	Thyrotoxicosis
Symptoms are fluctuating	Symptoms are progressive
When appetite is increased, patient gains weight	Patient loses weight, rarely gains weight
Patients of mania are full of energy, palms are cold	Patients are tired and exhausted and palms are warm and moist
Pulse rate is normal during panic attacks	Tachycardia is a usual feature
Coma may be associated with focal neurological signs	Coma may be associated with signs of hyperdynamic circulation

Table1: Clues to differentiate thyrotoxicosis from psychiatric diseases.

Severe headache as a major presentation is seen rarely [4]. This seems to be due to dilatation of temporal vessels and responds to beta blockers. Other features of thyrotoxicosis are often discernible. Pseudotumor cerebri like presentation has also been described [5]. Occasionally, seizures may be the presenting features of thyrotoxicosis. Requirement of higher than usual dose of anticonvulsants may be the lead to clinch the diagnosis [6]. Beta-blocker responsive choreoathetoid movements have also been reported as the presenting feature of the disease [7]. Difficulty in swallowing with nasal regurgitation, hoarseness of voice, responding to treatment of hyperthyroidism has rarely been observed [8]. Thyrotoxic hypokalemic periodic paralysis may be a presenting feature in thyrotoxicosis, latter, otherwise being clinically silent in 55% of these patients [9]. Hypokalemia is due to shift of potassium from extracellular to intracellular space in a genetically susceptible patient and weakness abates with the treatment of thyrotoxicosis as also with beta-blockers. Thyroid swelling or a stigmata of another autoimmune disease, more so, in a male patient may be the clues.

Cardiovascular Manifestations: It becomes challenging to suspect the contribution of the thyroid disease when congestive cardiac failure is precipitated by or is associated with thyrotoxicosis. Clues are that extremities in heart failure of other causes are often cold and clammy while are warm in association with thyrotoxicosis. Tachycardia, atrial fibrillation, weight loss, degree of hyperdynamic circulation and grade of failure not being in synchrony with the extent of structural heart damage or worsening without an apparent cause, or showing suboptimum response to the treatment are other leads. Subclinical hyperthyroidism is seen in 4%-17% patients of atrial fibrillation and it is advisable to rule out thyrotoxicosis in patients with atrial fibrillation [10]. Sinus rhythm returns in more than half of the patients usually within 4 months of the correction of thyrotoxicosis state. Myocardial infarction secondary to vasospasm and heart blocks are also described as rare manifestations [11,12].

Pulmonary hypertension has been seen in patients of thyrotoxicosis. Its pathogenesis is not clear but it seems that there is direct influence of thyroid hormone on the pulmonary vasculature. It responds to the treatment of the thyrotoxicosis but may take many months [13].

Gastrointestinal manifestations: Patients, more so elderly, often present with aversion to food and even with severe vomiting. Thyrotoxic patients may complain of difficulty in swallowing, constipation and upper abdominal pain. Hypercalcemia is often found but may not be the sole cause of these symptoms. Hypermotility seems to mediate the pain. When rebound tenderness or guarding is present, it may confuse with acute abdomen [14]. Surgery on such a patient may precipitate thyroid storm! Persistent hiccups precipitated by withdrawing and relieved by reinstituting antithyroid drugs has been reported [15].

Sexual Dysfunctions and Gynecomastia: Accelerated metabolism of testosterone to estrogen coupled with reduced metabolic clearance of the latter due to increased sex hormone binding globulin causes gynecomastia [16]. Some patents also complain of decreased libido and erectile dysfunction. Females may present as infertility. High degree of suspicion is needed to clinch the diagnosis.

Skin Manifestations: Hyperthyroid patient may occasionally

present to the dermatologist with chief complaint of itching or urticarial [17]. These patients respond to correction of hyperthyroid state but do not to antihistamines. Pathophysiology seems to be related to kinin activation. Occasionally patients develop generalized pigmentation of the skin. In Graves' disease, acropachy when present, is almost always associated with ophthalmopathy and dermopathy. Erythema annulare centrifugum in association of Graves' disease has been seen. It promptly responds to achieving euthyroid state.

Abnormal laboratory tests: Confusion arises when patient presents with laboratory abnormalities. Raised bilirubin, as also liver enzymes and alkaline phosphatase coupled with loss of appetite or vomiting may be confused with hepatitis. Thionamide drugs are hepatotoxic and must be used cautiously or alternatively radioiodine ablation may be preferred in these patients. Hypercalcemia associated with loss of weight can mimic a malignancy. Awareness about these changes helps in making correct diagnosis. Occasionally, anemia similar to that of chronic disease and various cytopenias have been seen. These patients improve with the return of euthyroid state. Thymus gland hyperplasia responding to correction of thyrotoxic state of Graves' disease is described [18]. Latter is an autoimmune disorder encompassing T-lymphocytes and pathophysiology could be an aberration in immune regulation.

Conclusion

Acceleration of physiological processes leading to increased activity and metabolism give rise to a combination of various symptoms and signs typically seen in thyrotoxicosis. Manifestations are often modified by age, preceding health status and presence of disturbance of functions of other organs as also with altered drug metabolism. Though, Graves' disease is more likely than other causes of thyrotoxicosis to give rise to severe disease, clinical severity is not in agreement with degree of disturbance in thyroid function tests. Historically, when sensitive tests for thyroid functions were not available, typical features as being more frequent were identified with thyrotoxicosis. However, recognition of rare and atypical clinical features of thyrotoxicosis is equally, if not more, important in timely and correct diagnosis in otherwise unsuspecting patient. Many co-morbidities, otherwise refractory to treatment, respond well after achieving euthyroid state. Hospitalized patients, as also the patients of atrial fibrillation without obvious cause, especially in elderly, should be screened for the thyroid functions.

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