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Hyperthyroidism Presenting with Urinary and Faecal Incontinence

Fatma Said Muhali[1*], Godlove Shangwe Twamala[1] and Noel G. Mwanga[2]

[1]Department of Internal Medicine, Endocrinology Unit, Muhimbili National Hospital, Mloganzila, Dar es Salaam, Tanzania

[2]Department of Internal Medicine, Endocrinology Unit, Kampala International University in Tanzania, Dar es Salaam, Tanzania

[*]**Corresponding author:** Fatma Said Muhali, Department of Internal Medicine, Endocrinology Unit, Muhimbili National Hospital, Mloganzila, Dar es Salaam, Tanzania. E-mail: muhalifatma@yahoo.co.uk

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Abstract

Hyperthyroidism commonly presents with metabolic and cardiovascular symptoms, but urinary and especially faecal incontinence are rarely recognised manifestations. We report a 50-year-old woman with diabetes, hypertension and previous stroke who presented with progressive urinary and faecal incontinence for six months. Extensive gastrointestinal and urological investigations were unremarkable. Clinical examination revealed tachycardia and a thyroid swelling. Thyroid function tests confirmed thyrotoxicosis. The patient was treated with carbimazole, resulting in biochemical improvement and marked resolution of incontinence symptoms.

This case highlights that thyroid dysfunction should be considered in patients with diabetes presenting with unexplained urinary or faecal incontinence, as recognition can prevent unnecessary investigations and lead to reversible outcomes.

Keywords: Multinodular goitre; Hyperthyroidism; Graves' disease; Incontinence

Introduction

Thyroid hormones affect the metabolic processes of many organs. It is estimated that 60% to 80% of thyrotoxicosis cases are associated with Graves' disease [1]. Other common causes of thyrotoxicosis include toxic adenoma and toxic multinodular goitre. The usual symptoms are tremors, hyperactivity, palpitations, tachycardia, heat intolerance and weight loss [1]. Thyrotoxicosis-associated gastrointestinal symptoms include nausea, vomiting, abdominal pain and changes in bowel habits [1]. Faecal incontinence is not a common manifestation of hyperthyroidism, but it is common in diabetes mellitus, Crohn's disease, ulcerative colitis, celiac disease and inflammatory bowel disease [2]. Hyperthyroidism is also associated with urinary symptoms such as urgency and urge incontinence as part of lower urinary tract symptoms seen in these patients [3]. We present the case of a woman who presented with urine and faecal incontinence after a thorough review, she was diagnosed with hyperthyroidism and her symptoms resolved after the initiation of anti-thyroid drugs. The diagnosis was delayed due to a similar presentation that could have been caused by her uncontrolled blood sugar levels, which lead to unnecessary investigations and consultation in urology and gastrointestinal clinics.

The case highlights the importance of the evaluation of thyroid dysfunction in patients with diabetes mellitus presenting with incontinence symptoms.

Case Presentation

We present a 50-year-old female with a five-year history of hypertension treated with losartan and amlodipine, and a two-year history of type 2 diabetes mellitus treated with metformin and glimepiride using her medications regularly. She attended our facility, presenting with urine incontinence for 6 months and faecal incontinence for 4 months.

She had been well until six months before presentation, when she developed urinary urgency followed by inability to hold urine, resulting in frequent episodes of incontinence. Four months later, she developed similar symptoms involving bowel control. She reported a strong urge to defecate but an inability to retain stool long enough to reach the toilet. There was no history of diarrhoea, constipation, black stools, dyspepsia, abdominal pain, dysuria, flank pain, or urinary tract infection symptoms. The incontinence was not triggered by coughing, physical exertion, or stress.

Because of these symptoms, she attended gastroenterology and urology clinics where upper endoscopy and colonoscopy were performed and found to be normal. Her symptoms were initially attributed to diabetic autonomic dysfunction, and she was referred for endocrine review due to glycated haemoglobin (HbA1C) of 8%.

At the endocrine clinic, she was noted to have tachycardia and was questioned about symptoms of thyroid dysfunction. She reported only mild palpitations and occasional heat intolerance, which she had not previously considered significant.

On examination
She was alert and oriented.
Vital signs were:
• Blood pressure: 150/90 mmHg
• Pulse rate: 110 beats per minute
• Respiratory rate: 16 breaths per minute
• Temperature: 36.5 °C
• Oxygen saturation: 98% on room air

Local examination: Anterior neck swelling measuring approximately 3 × 2 cm, moving with deglutition, non-tender, and without overlying skin changes.

The following are the laboratory results.

Table 1: Thyroid panel.

Hormones	**At presentation**	**Follow-up (After 6 weeks)**	**Follow-up (After 24 weeks)**	**Reference range**
T3 pg/ml	20.00	6.145	2.145	1.45-3.48
Free T3 pg/ml	20.00	6.145	2.145	1.45-3.48
Free T4 ng/dl	4.60	1.615	1.74	0.71-1.85
TSH uIU/ml	0.0039	0.01	0.2	0.49-4.67

USS neck; the thyroid gland is grossly enlarged with heterogeneous texture reduced echogenicity, and normal vascularity; no calcification seen.

Right lobe volume: 10.85mls

Left lobe volume: 7.95mls

Isthmus AP diameter: 5.5mm.

• The adjacent great vessels (common carotid arteries and internal jugular veins are normal.

• No cervical lymph node enlargement.

• Normal hyoid muscles.

Kidney, Urinary and Bladder USS; Normal.

Table 2: Baseline laboratory results.

Lab test	**Results (at presentation)**	**Follow-up (After 6 weeks)**	**Reference range.**
Total bilirubin (umol/L)	5.3		5.2-41
Direct bilirubin(umol/L)	2.8		0.72-8.22
AST (U/L)	62	29.67	0-43.1
ALT(U/L)	110.19	15.95	0-55
Blood urea nitrogen (mmol/L)	3.9		2.5-6.7
Creatinine (umol/L)	48.0		50.4-98.1
Cholesterol (mmol/l)	3.40		0-5.53
HDL cholesterol (mmol/l)	1.02		1.04-1.55
LDL (mmol/l)	2.0060		0-3.34
Triglycerides	1.87		0-2.83

The patient was started on carbimazole 20mg twice a day.

Within 6 weeks of therapy, the patient showed improvement in her symptoms. She reported marked reduction in urine and faecal incontinence, reduced palpitations and no heat intolerance. She is continuing with regular follow-ups at endocrinology, cardiac clinics with no incontinence symptoms and markedly improvement of thyroid function with results done at 24 weeks.

Discussion

Evidence that reports hyperthyroidism as a cause of urine and faecal incontinence is scarce. However, diabetic autonomic neuropathy (DAN) is one of the serious and common complications of T2DM, and it is reported in patients with uncontrolled glucose levels [4]. Both bladder dysfunction, like urine incontinence and gastrointestinal disturbances are frequently described symptoms in DAN. On the other hand, the coexistence of type 2 diabetes mellitus and thyroid dysfunction is usually overlooked. Insulin resistance and autoimmunity play a role in the development of thyroid dysfunction in patients with T2DM [5].

The coexistence of uncontrolled glucose levels with DAN symptoms in our patient delayed the diagnosis of hyperthyroidism, as all the symptoms seemed to be complications of uncontrolled T2DM.

Hyperthyroidism can affect the urinary system, presenting with both obstructive and irritative lower urinary tract symptoms (LUTS). Increasing in urinary frequency, urge incontinence, nocturia, primary and secondary enuresis are other presentations [3]. A patient with hyperthyroidism may first present with bladder involvement manifestations as the primary symptom, or it may develop many months after hyperthyroidism diagnosis and usually responds well to antithyroid therapy with complete recovery after initiation of medications [3].

There is insufficient data which report association of faecal incontinence and hyperthyroidism; therefore, the exact mechanism by which hyperthyroidism causes faecal incontinence is not known. However, it is reported that patients with hyperthyroidism are found to have impaired anorectal physiology with lower rectal threshold of sensation, squeeze pressure and mean anal resting pressure [6]. After one week of initiation of antithyroid medications the patient reported significant improvement in the incontinence symptoms and improvement in quality of life. For accurate diagnosis of faecal incontinence, history taking and physical examination are mandatory and high-resolution anorectal manometry is a gold standard investigation [7]. However, it could not be done to our patient as it was not available at our hospital.

Patient blood glucose was also followed up patient remained on same medication and dose, diet and exercise counselling was done for better blood glucose control. Patient's HbA1C done at 24 weeks after initiation of MMI was 6.9%.

Conclusion

Evaluation of thyroid function is crucial for patients with diabetes mellitus who present with symptoms such as faecal and urine incontinence. This case underscores the need for screening of hyperthyroidism in diabetic patients as they can coexist as in this case.

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Authors Contributions

Fatma Muhali: Writing – Conceptualization and supervision.

Noel G. Mwanga: Writing – Original draft, Data curation

Godlove S. Twamala: Writing – Original draft, Data curation

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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