

Chronic Intractable Hiccup as a Presenting Symptom of Autoimmune Thyroiditis with Hypothyroidism

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Abstract: *Hiccup has been reported as a rare presentation in thyrotoxicosis of Graves' disease and subacute thyroiditis with hyperthyroidism and not reported in hypothyroidism so far. Here we report a case of chronic persistent intractable hiccup as a presenting symptom of hypothyroidism in autoimmune thyroiditis without a goitre.*

Keywords: Hiccup, Intractable hiccup, Persistent hiccup, Hypothyroidism, Autoimmune thyroiditis

1. Introduction

Hiccup is an involuntary, intermittent, spasmodic contraction of the diaphragm and intercostal muscles accompanied by sudden inspiration that ends with abrupt closure of the glottis, making the classic hiccup sound [1]. Hiccup is usually transient and is due to benign causes like rapid eating, swallowing large quantity of food etc. Hiccup lasting longer than 48 hours are persistent and those lasting more than 2 months are regarded as intractable [2]. Chronic persistent hiccup can be due to renal, cardiac, neurological and gastrointestinal causes but so far hypothyroidism is not a known cause [1].

Hashimoto's thyroiditis, otherwise called as Chronic Lymphocytic Thyroiditis, is an autoimmune disease that usually presents with a goitre and hypothyroidism [7]. There will be slowly progressive lymphocytic infiltration in the thyroid gland. It's common in young females between 40-65 years and rare in males [6].

2. Case Report

A 40 year old Male, Driver by occupation with no comorbidities or addictions presented with a history of intractable persistent hiccup of 3 years duration. There was a history of weight loss and also increased frequency of stools with variable consistency. Prior to admission he underwent both non-invasive and invasive investigations for the symptoms and all were found to be normal. Considering as a benign hiccup, he was treated with baclofen, but his symptoms were not relieved and presented to us.

On our examination, patient was a thin individual, afebrile, pulse was 52/min, BP was normal and hydration was adequate. On examination of neck, thyroid was not enlarged. All systems were clinically normal.

As the patient had chronic intractable hiccup with increased frequency of stools and bradycardia, the following investigations were done.

| Investigations | Report | Remarks |
|--------------------------------|--|-------------------------------------|
| Complete Blood Count | Hb-12.6gm%, TC-7,000, N-41.3%, L-53.4%, E-2.6%, M-2.1%, B-0.6%, ESR- 28/60, RBC indices - normal | Normal |
| Random Blood Sugar | 84mg/dL | Non-diabetic |
| HbA1c | 5.0% | |
| Blood Urea | 27mg/dL | Normal Renal function |
| Serum Creatinine | 0.7mg/dL | |
| Serum Electrolytes | Na-135.3mmol/L, K-3.9mmol/L, Cl- 101.7mmol/L, Ca- 9.6mmol/L. | |
| Urine routine examination | pH-6.0, Albumin- nil, Sugar- nil Urobilinogen- N, Bilurubin- nil, Cells- nil | Normal |
| Liver function test | T.B: 0.6, D.B: 0.14, SGOT: 38, SGPT: 28, ALP: 81, Protein: 5.8, Alb: 4.7 | Normal liver function |
| Serum Amylase& Lipase | Amylase-22, Lipase- 12 | Ruled out pancreatitis |
| Lipid Profile | T- 162, LDL- 108.2, HDL-40, TGL- 69, VLDL- 13.8 | Normal |
| HIV 1&2, HBsAg, Anti HCV | Negative | Ruled out possible virus infections |
| Electrocardiography | Rate- 54/min, regular. Otherwise normal. | Sinus bradycardia |
| Echocardiogram | Normal study with bradycardia during examination. | Bradycardia |
| CT-Brain | Normal study | |
| Ultrasonogram- Abdomen& Pelvis | Normal study | |
| CT- Abdomen | Normal study | |

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|-----------------------------------|--------------|--|
| Upper gastro-intestinal endoscopy | Normal study | |
| Colonoscopy | Normal study | |

Thyroid Profile

| | | |
|---------------------------------|--|---|
| Thyroid function test | Free T3- 1.85pg/mL (2.0-4.4) Free T4- 0.81 ng/dL (0.93-1.7) TSH - 36.37uIU/mL(0.27-5.35) | <u>Primary Hypothyroidism</u> |
| Anti Thyroidperoxidase antibody | 575.74 IU/mL (0.0- 5.61) | <u>Autoimmune Thyroiditis</u> |
| Ultrasonogram Thyroid gland | Sonologically normal morphology and vascularity. | <u>No Goitre with normal vascularity</u> |

Hence the diagnosis was confirmed as autoimmune thyroiditis with hypothyroidism.

Immediately patient was started on Thyroxine 50mcg P.O. once daily. Within 10 days of thyroid replacement therapy there was a dramatic clinical improvement with complete relief of hiccups and the patient had a feeling of well being.

2. Discussion

Chronic persistent hiccup is usually due to some serious underlying gastrointestinal, renal, cardiac or neurological disorder. It has been reported as a presenting symptom of Graves thyrotoxicosis and subacute thyroiditis with hyperthyroidism^{[2][3][5]}.

This 40 year old man presented with persistent intractable hiccup was investigated for all the probable aetiology and finally confirmed as Hashimoto's (autoimmune) thyroiditis with hypothyroidism.

Hashimoto's thyroiditis is an autoimmune thyroid disease first by Hakaru Hashimoto in 1912^[6]. Antibodies against thyroid peroxidase- antithyroid peroxidase antibody (anti TPO Ab) and/or antithyroglobulin (anti-Tg Ab) cause a gradual destruction of follicles in the thyroid gland^{[6][7][8]}. The diagnosis is confirmed by measuring antithyroid antibodies in the blood^{[6][7]}. In our case it has been proved.

In Hashimoto's thyroiditis the progressive and gradual chronic inflammation in the gland will lead on to atrophy at a later stage^{[6][7][8]}. If Hashimoto's thyroiditis is diagnosed at an early stage, thyroid gland may be normal in size^[7] as in our case.

In Hashimoto's thyroiditis there is thyroid cell inflammation followed by destruction causing release of stored thyroid hormones into the circulation^{[6][7][8]}. This 'leakage' of thyroid hormone is responsible for the thyrotoxicosis which is usually transient and occurring in early stages. It is known as 'Hashitoxicosis'^{[6][7][8]}. It is more common in the early stages of autoimmune hypothyroidism^{[6][7]}. The feature suggestive of hyperthyroidism the form of increased frequency of bowel habits in our patient is probably due to hashitoxicosis.

The exact cause for hiccups in this patient, a case of autoimmune thyroiditis with hypothyroidism is not clearly understood whether it is due to autoimmune thyroiditis or due to hypothyroidism. Dramatic relief of hiccups following thyroxine replacement therapy is favouring hypothyroidism

is the cause. Further studies is needed in this aspect. In autoimmune thyroiditis, due to intrathyroidal inflammation the phrenic nerve maybe stimulated causing the hiccup^[3]. This view is supported because hiccup has been reported as a presenting symptom in thyrotoxicosis of Grave's disease and subacute thyroiditis, both of autoimmune origin^{[2][3][5]} and our case is also autoimmune thyroiditis.

3. Conclusion

We report this case to highlight chronic intractable hiccup as a rare presenting symptom of Hashimoto's (autoimmune) thyroiditis with hypothyroidism and also to create awareness about hashitoxicosis among physicians.

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