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Article in *Médecine Nucléaire* · June 2023

DOI: 10.1016/j.mednuc.2023.05.001

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Case Report

# A case study on Hashimoto's thyroiditis induced electrolyte imbalance

## Une étude de cas sur le déséquilibre électrolytique induit par la thyroïdite de Hashimoto

[S. Nirenjen<sup>a</sup>](#), [S. Ankul Singh<sup>a</sup>](#), [A. Subramanian<sup>a</sup>](#), [A. Singh<sup>a</sup>](#), [D. Sakthi Vignesh<sup>b</sup>](#), [P. Somasundaram<sup>c</sup>](#)  

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### Abstract

Lymphocytic thyroiditis is an autoimmune condition where auto-antibodies are produced against the thyroid gland. Initially, there might be a hyperthyroidism condition where T3 and T4 levels are high and external inflammation of thyroid gland might be seen, but over the course of time the destruction of thyroid gland can result in hypothyroidism where the complete destruction of thyroid gland. Electrolyte imbalances notably hypokalemia and hypomagnesemia with Hashimoto thyroiditis is a rare condition, in this article we will discuss about the course of treatment a 40-year-old female patient who presented with atypical symptoms of Hashimoto thyroiditis during her stay in the hospital.

### Résumé

La thyroïdite lymphocytaire est une maladie auto-immune caractérisée par la production d'auto-anticorps contre la glande thyroïde. Au début, il peut y avoir une hyperthyroïdie où les taux de T3 et de T4 sont élevés et une inflammation externe de la glande thyroïde peut être observée mais, au fil du temps, la destruction de la glande thyroïde peut entraîner une hypothyroïdie avec une destruction complète de la glande thyroïde. La thyroïdite de Hashimoto est une maladie rare qui peut s'accompagner de déséquilibres électrolytiques, notamment d'une hypokaliémie et d'une hypomagnésémie. Dans cet article, nous rapportons le déroulement du traitement à l'hôpital d'une patiente de 40 ans qui s'est présentée avec des symptômes de thyroïdite de Hashimoto.

### Introduction

Chronic lymphocytic thyroiditis (Hashimoto's thyroiditis) is an inflammatory condition of the thyroid gland and the most common cause of goitre [1]. It is an autoimmune condition characterized by high level of circulating ANA antibodies to thyroid peroxidase and thyroglobulin [2]. Chronic lymphocytic thyroiditis is one of the most common causes of hypothyroidism all over the world and approximately 7 percent of euthyroid TPOAb-positive women will develop hypothyroidism within 1 year pre-conception or in pregnancy [3]. Women, usually between 30 and 50 years of age, are more common to develop Hashimoto disease [4]. Chronic lymphocytic thyroiditis is also the most common

cause of sporadic goitre in children [5], [6]. The incidence of Hashimoto's disease has increased over the past 50 years and this increase may be due to an increased iodine content in the diet [7]. A genetic predisposition to thyroid autoimmunity exists; it is inherited as a dominant trait. Hashimoto's disease has also been linked to systemic lupus erythematosus, rheumatoid arthritis and type 1 diabetes mellitus [8]. Thyroid lymphoma is a rare but serious complication of chronic autoimmune thyroiditis. These lymphomas usually occur in women from 50 to 80 years of age and are limited to the thyroid gland [9], [10]. Electrolyte imbalance with Hashimoto thyroiditis is a rare condition which is been discussed about the course of treatment a patient had received.

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## Section snippets

### Case-scenario

A 40-year-old female patient arrived in the general medicine OP department with the chief complaints of burning sensation of chest, indigestion, generalized weakness for 3 days, she had vomiting 3 episodes in the past two days with greenish exudate and she had constipation. Her history includes abdominal pain on and off, she had no history of Chest pain, Palpitation, sweating, Fever, loose stools, and giddiness. She stated numbness and cramps in the perioral region hands and legs. On further...

### Discussion

Lymphocytic thyroiditis is an autoimmune condition where autoantibodies are produced against the thyroid gland. Initially, there might be a hyperthyroidism condition where T3 and T4 levels will be high and external inflammation of thyroid gland might be seen. Over a course of time, the destruction of thyroid gland can result in hypothyroidism where the complete destruction of thyroid gland occurs sometimes these conditions can result in or mimic sub clinical hypothyroidism but the primary goal...

### Conclusion

Lymphocytic thyroiditis is an autoimmune condition where autoantibodies are produced against the thyroid gland and the destruction of thyroid gland can result in hypothyroidism over the course of time. Electrolyte imbalance with Hashimoto thyroiditis is a rare condition. Hashimoto's thyroiditis had affected a female in this case report, who presented with severity of electrolyte imbalance and has been provided with scheduled treatment for the period of one week. For reconsidering the possible...

### Disclosure of interest

The authors declare that they have no competing interest....

### Funding

No specific funding was obtained for this study....

### Author contributions

Conceptualization: P. Somasundaram, Dr. D. Sakthi Vignesh.

Data curation: Nirenjen. S.

Formal analysis: Ankul Singh.

Investigation: Arunkumar Subramanian.

Resources: Anuragh Singh.

Supervision: Dr. D. Sakthi Vignesh.

Writing and editing: P. Somasundaram.

All the authors have read and approved the final version of the manuscript.

Corresponding author, P. Somasundaram, had full access to all the data in this study and takes complete responsibility for the integrity of the data and the accuracy of the...

## Transparency statement

The lead author, P. Somasundaram, affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained....

## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request....

## Acknowledgement

We extend our sincere thanks to all the participants....

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