



Study of the Indications of Surgery in Hashimoto's Thyroiditis

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Abstract

Background: Hashimoto's thyroiditis, or chronic lymphocytic thyroiditis, is the most common cause of hypothyroidism. It is an autoimmune disease involving chronic inflammation of the thyroid. The treatment of Hashimoto's thyroiditis includes medical therapy and surgical resection of the gland. *Aim of the work:* It has been approved that the vast majority of its complications are purely surgical, whereas a wide range of surgical interventions is mandatory to treat those complications, and that is what I will discuss in my research. *Patients and Methods:* Sixty-three patients were diagnosed with Hashimoto's thyroiditis between January 2010 to December 2021 at Tobruk Medical Center. All patients underwent clinical presentations correlated with laboratory findings of T3, T4, TSH, Anti-TPO and AntiTG. Furthermore, fine needle aspiration cytology with and without ultrasound guiding with correlation of ultrasound findings. *Result:* A total of 51 (80.9 %) Hashimoto's thyroiditis patients had been treated medically. At the same time, only 12 (19.1 %) Hashimoto's thyroiditis patients had been treated surgically. There is a significant relationship between patients' age, sex, family history, diagnosis by Ultrasound, travel distance, and diagnosis with FNAC. *Conclusion:* Thyroid surgeries in case of Hashimoto's thyroiditis indicated in the presence of goitre with or without compression syndrome, euthyroidism or hypothyroidism with high Anti-TPO and Anti-TG serum levels, or in Hashimoto's thyroiditis patients with nodules which malignancy is diagnosed or could not be ruled out.

Keywords: *Thyroid, Hashimoto's thyroiditis, Endocrine Surgery, Thyroid Cancer, Thyroidectomy.*

Introduction

Hashimoto thyroiditis is an autoimmune disease and the most common cause of hypothyroidism. It is also known as chronic autoimmune thyroiditis and chronic lymphocytic thyroiditis. The pathology of the disease starts with the formation of antithyroid antibodies that attack the thyroid tissue, causing progressive fibrosis. The most common laboratory findings are elevated thyroid-stimulating hormone (TSH) and low levels of free thyroxine (fT4), coupled with increased antithyroid peroxidase (TPO) antibodies. However, throughout

the course of the disease, patients may experience signs, symptoms, and laboratory findings of hyperthyroidism or average values. This is because of the intermittent destruction of the thyroid cells. Women are more affected, and most of them are diagnosed between the ages of 30 to 50 years. The female-to-male ratio is 10:1 (1)(2).

Dr Hakaru Hashimoto initially reported Hashimoto's thyroiditis in 1912 (3). He examined the surgical specimens of four middle-aged women who had undergone thyroidectomy because of compressive symptoms. He summarised the pathological findings in an article written in German containing two Latin words in the title (*struma lymphomatosa*) and five microphotographs. The article went unrecognised for about two decades: only a few cases of *struma lymphomatosa* were reported in the literature, often eliciting considerable controversy as to whether they represented a distinct disease or an early phase of Riedel's thyroiditis (4).

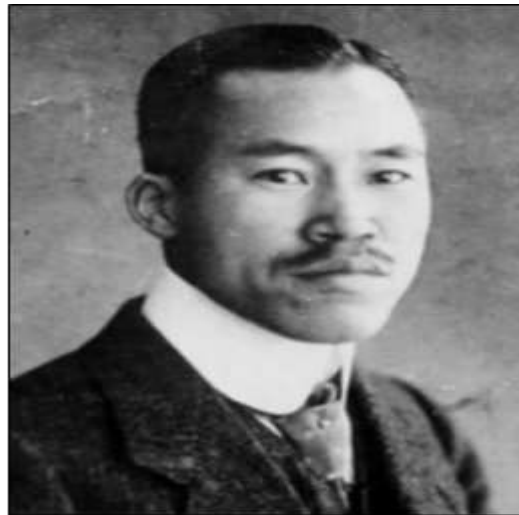


Figure (1): Hakaru Hashimoto

In 1931, Graham and McCullagh used the term “Hashimoto” for the first time in the title of an article, strongly arguing that *struma lymphomatosa* was indeed distinct from Riedel's thyroiditis (5). In 1939, the British thyroid surgeon Cecil Joll coined the term “Hashimoto disease” and used it in the title of a review he wrote about this condition (6). Since then, Hashimoto's thyroiditis has gone from being a rarity to one of the most common autoimmune diseases, as well as the most common endocrine disease. Its incidence is about 1 case per 1000 persons per year (7). The prevalence is 8 cases per 1000 from a review of published articles and 46 cases per 1000 from the biochemical evidence of hypothyroidism and thyroid autoantibodies in subjects participating in the Third National Health and Nutrition Examination Survey (8)(9).

Patients and Methods

Sixty-three (63) patients were diagnosed with Hashimoto's thyroiditis between January 2010 to December 2021 at Tobruk Medical Center. All patients underwent clinical presentations correlating with T3, T4, TSH, Anti-TPO and Anti-TG laboratory findings.

Furthermore, fine needle aspiration cytology with and without ultrasound guiding correlates with ultrasound findings.

The criteria for inclusion in the research were:

- Patient's consent to the study.
- The presence of HT with hypothyroidism compensated by Thyroxin preparations.
- Absence of common somatic and systemic autoimmune diseases.
- The high levels of serum Anti-TPO and Anti-TG.

Statistical analysis

Surgical and non-surgical treatment of Hashimoto's thyroiditis were analysed using the Chi-square test. Values of $P < 0.05$ were considered statistically significant. The SPSS 23 software package (SPSS, Chicago, IL, USA) was used for statistical analysis.

Results

1. Age group of Hashimoto's thyroiditis Patients:

More than two-thirds (47 cases, 74.6%) of Hashimoto's thyroiditis Patients were below 40 years. While 16 cases (25.4 %) were above 40 years. The median age of patients at diagnosis was 40 years.

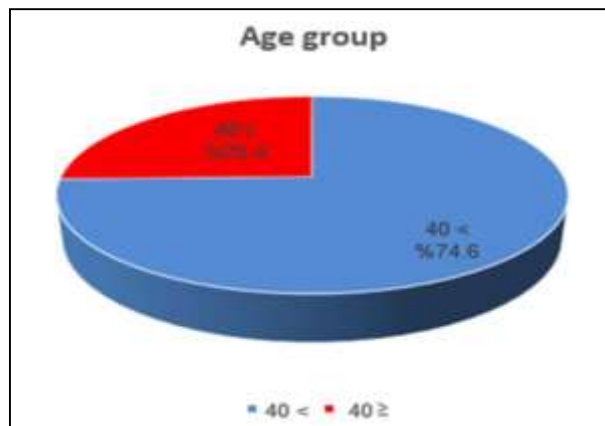


Figure (2): Age Groups of Hashimoto's thyroiditis Patients

2. Sex group of Hashimoto's thyroiditis Patients:

More than two-thirds (50 cases, 79.4 %) of Hashimoto's thyroiditis Patients were females. In contrast, 13 cases (20.6 %) were males.

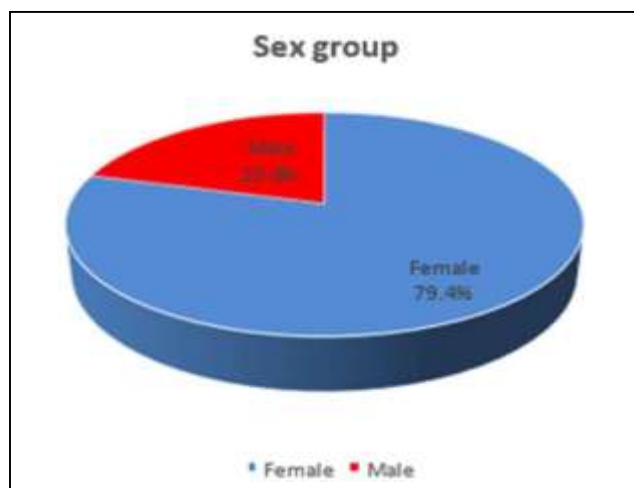


Figure (3): Sex Groups of Hashimoto's thyroiditis Patients

3. Family history of Hashimoto's thyroiditis Patients:

40 cases (63.5 %) of Hashimoto's thyroiditis Patients had a family history of Hashimoto's thyroiditis. While 23 cases (36.5 %) had no family history of Hashimoto's thyroiditis.

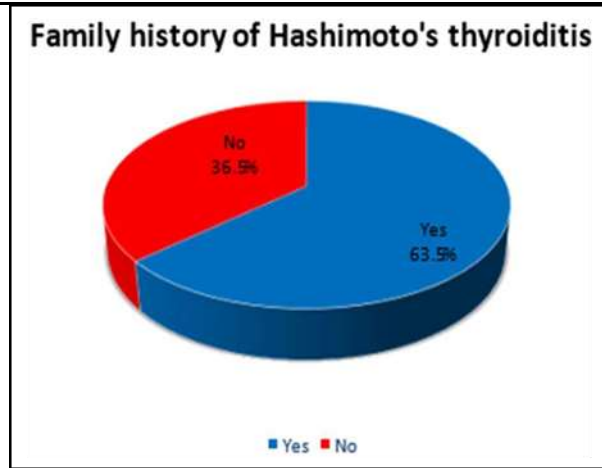


Figure (4): Family history of Hashimoto's thyroiditis Patients

4. Presenting chief complaint of Hashimoto's thyroiditis Patients:

51 cases (80.5 %) of Hashimoto's thyroiditis Patients were presented by thyroid nodules. 17 cases (26.9 %) were presented by goitre. 23 cases (36.5 %) were presented by myalgia. While 9 cases (14.2 %) were presented by other complaints such as shortness of breath, dysphagia or weight gain.

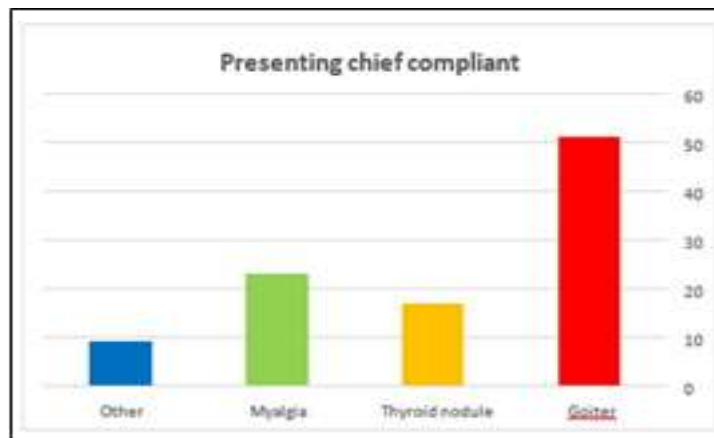


Figure (5): Presenting chief complaint of Hashimoto's thyroiditis Patients

5. Hormonal assay of thyroid:

36 cases (57.2 %) of Hashimoto's thyroiditis Patients were hypothyroid. While 25 cases (39.6 %) were euthyroid, also 2 cases (3.2%) were hyperthyroid.

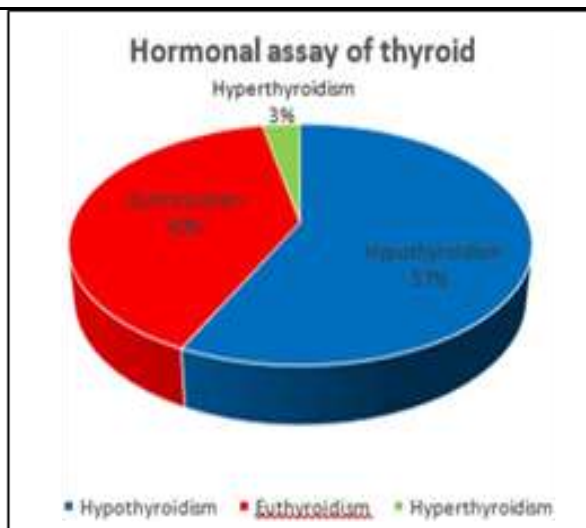


Figure (6): Hormonal assay of Hashimoto's thyroiditis Patients

6. Antibodies assay of Hashimoto's thyroiditis Patients:

63 cases (100 %) of Hashimoto's thyroiditis Patients were positive for Anti- TPO. While 37 cases (58.7 %) were positive for anti-TG.

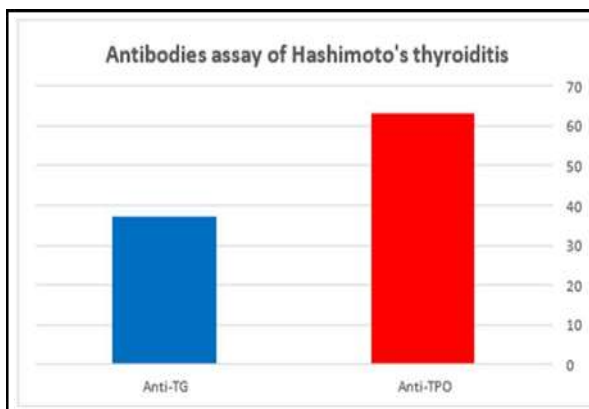


Figure (7): Antibodies assay of Hashimoto's thyroiditis Patients

7. Ultrasound findings of Hashimoto's thyroiditis patients:

38 cases (60 %) of Hashimoto's thyroiditis patients were diagnosed by ultrasound. While 25 cases (40 %) were not diagnosed by ultrasound.

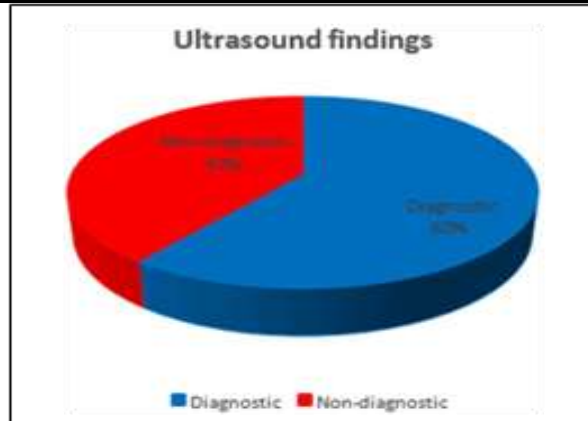


Figure (8):Ultrasound findings of Hashimoto's thyroiditis patients

8. Fine needle aspiration cytology of Hashimoto's thyroiditis Patients:

43 cases (68.2 %) of Hashimoto's thyroiditis patients were informative by FNAC. While 20 cases (31.8 %) were non- informative by FNAC.

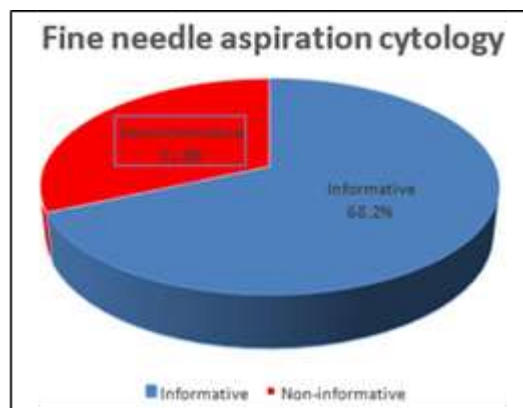


Figure (9): Fine needle aspiration cytology of Hashimoto's thyroiditis Patients

Conclusion

In conclusion, Hashimoto's thyroiditis is a medical autoimmune disease and the most common cause of hypothyroid goitre with a 1:10 male-to- female ratio.

It has been approved that some of its complications must undergo surgical intervention. Thyroid surgeries in case of Hashimoto's thyroiditis indicated in the presence of goitre with or without compression syndrome, euthyroidism or hypothyroidism with high Anti-TPO and Anti-TG serum levels, or in Hashimoto's thyroiditis patients with nodules which malignancy is diagnosed or could not be ruled out.

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