

Original Research Article


# Clinical study of Hashimoto's thyroiditis

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## Abstract

**Background:** Hashimoto's thyroiditis, a well known condition affecting the thyroid gland is often under diagnosed due to its wide spectrum of clinical manifestations. As such it could present as a Multi Nodular Goitre, Diffuse Goitre or Solitary Nodule with features of Hypothyroidism, Hyperthyroidism or Euthyroid state.

**Materials and methods:** Total 120 patients with Hashimoto's Thyroiditis were studied with history, clinical signs and symptoms, recorded in the format and were subjected to hormonal assay, FNAC.

**Results:** Out of 120 cases, 117 were females and 3 were males. All the 120 patients presented with complaint of swelling in the front of the neck, most of the patients presented within 6 months after noticing the swelling. Consistency of the gland was firm in all cases. 75 patients were Multi Nodular Goitre (62.5%), 42 were Diffuse Goitre (35%) and 3 were solitary nodule (2.5%). 57 patients were Hypothyroid (47.5%), 42 patients were Euthyroid (35%) and 21 patients were Hyperthyroid (17.5%). FNAC was positive in 111 patients (92.5%). Antibodies were positive in 105 patients (87.5%). 105 patients were treated conservatively and monitored regularly every 3 months.

**Conclusion:** In Hashimoto's thyroiditis, the hyperthyroid patients showed high positivity to Anti TPO Antibody, the hypothyroid patients were highly negative to Antibodies, and the Euthyroid patients responded well to Thyroxine therapy. Surgery was mostly required for patients presented with symptoms and signs of obstruction. Incidence of Lymphoma in patients with Hashimoto's Thyroiditis was usually high.

## Key words

Hashimoto's Thyroiditis, Multi Nodular Goitre, Anti TPO antibody.

## **Introduction**

Hashimoto's Thyroiditis, a well known condition affecting the thyroid gland is often under diagnosed due to its wide spectrum of clinical manifestations. As such it could present as a Multi Nodular Goitre, Diffuse Goitre or Solitary Nodule with features of Hypothyroidism, Hyperthyroidism or Euthyroid state. Chronic lymphocytic thyroiditis was described by Hakaru Hashimoto in year 1912, but the link to autoimmune basis was first defined by Professor Roitt. It is now documented that all cases with histological features of lymphocytic infiltration are not Hashimoto's Thyroiditis.

## **Aim and objectives**

- To detect cases of Hashimoto's Thyroiditis by FNAC, positive Antibody titres and/or final Histopathology.
- To study the varied clinical pattern of these cases.
- To detect the number of cases of Hashimoto's Thyroiditis that present with biochemical features of hypo/hyper/ euthyroid state.
- Correlation of FNAC and Hormone assay with Auto Antibodies against the thyroid gland.
- To determine the number of cases of Hashimoto's Thyroiditis those are actually taken up for surgery.

## **Material and methods**

This study was conducted on 120 patients of Hashimoto's Thyroiditis, from November 2012 to September 2014. Data was collected from 120 patients, both outpatients and inpatients in the Department of Surgery.

## **Inclusion criteria**

All patients >10 year age, diagnosed to have Hashimoto's Thyroiditis were included. Diagnosis was made on the basis of FNAC, positive Antibody status or final Histopathology report.

## **Exclusion criteria**

All patients <10 year age, diagnosed to have thyroid malignancy prior to their admission were excluded.

Patients were informed about the study, the relevance of the investigations, the "non surgical" treatment modality, the requirement of daily thyroxine supplement presumably for an indefinite period of time and the need for regular follow up.

All the investigations required for the study were usually done on outpatient basis. Patients who underwent surgery were admitted and investigated prior to surgery.

All the patients presented to the surgical outpatient with enlargement of thyroid were subjected to Hormonal assay and FNAC. If FNAC showed features of lymphocytic infiltration, then thyroid Autoantibody estimation was done. However, if FNAC showed no features of lymphocytic infiltration, but the patient was in subclinical or overt hypothyroidism even then also Antibody estimation was done.

The patients who underwent surgery, had an additional spectra of preoperative investigations with routine blood, urine examination, chest and neck X-rays, ECG and an indirect laryngoscope examination. They were duly certified "fit" by the attending physician and undergone subtotal thyroidectomy. Immense care was taken in obtaining a detailed history, local and systemic examinations were done. Post-operative Histopathological examination of the thyroid specimens were done in all cases. The data thus obtained was recorded in format prepared.

## **Results**

During 2 years of study period, 120 cases of Hashimoto's Thyroiditis were treated, 117 were females and 3 were males. The occurrence of Hashimoto's Thyroiditis observed maximum in the 30 -34 year age group. Females

outnumbered the males with a male to female ratio of 1: 39 as per **Table - 1**.

**Table - 1:** Demographic details in study.

Age ( in years)	Female	Male
<20	6	-
20 – 29	36	-
30 – 39	39	-
40 – 49	30	-
> 50	6	3
Total	117	3

All the 120 patients presented with complaint of swelling in the front of the neck, 6 patients presented with obstructive symptoms as well. Duration of the swelling ranged from 1 month to 4 years, however, most of the patients presented within 6 months duration of noticing the swelling. Consistency of the gland was firm in all cases as per **Table - 2**.

**Table - 2:** Symptoms and duration of swelling.

Symptoms	No. of patients
Swelling	120
Toxic symptoms	21
Obstructive symptoms	6
Pain	Nil
Change in Voice	Nil
<b>Duration of Swelling</b>	
0 - 6 months	63
>6 months – 1 year	33
>1 - 2 years	18
>2 - 3 years	3
> 3 years	3

In this study, 75 patients were Multi Nodular Goitre (62.5%) (**Figure – 1**), 42 were Diffuse Goitres (35%) (**Figure – 2**) and 3 were Solitary Nodule (2.5%). 57 patients were Hypothyroid (47.5%), 42 patients were Euthyroid (35%) and 21 patients were Hyperthyroid (17.5%) as per **Table - 3**. FNAC was positive in 111 patients (92.5%). Antibodies were positive in 105 patients (87.5%). 105 patients were treated

conservatively and monitored regularly every 3 months as per **Table - 4**.

**Table - 3:** Clinical presentation and thyroid status.

Clinical presentation	No. of patients	Percentage
Multi Nodular Goitre	75	62.5%
Diffuse Goitre	42	45%
Solitary nodule	3	2.5%
<b>Thyroid Status</b>		
Hypothyroid	57	47.50%
Euthyroid	42	35 %
Hyperthyroid	21	17.5%

**Table - 4:** FNAC and antibodies estimation findings in study.

FNAC	No. of patients	Percentage
Hashimoto's Thyroiditis	111	92.5 %
Colloid goitre.	9	7.5%
<b>Antibodies estimation</b>		
Both Antibodies Positive AMA and ATG	60	50%
Both Antibodies Negative AMA and ATG	15	12.5%
Only A MA Positive	36	30%
Only ATG Positive	9	7.5 %

All 105 patients were clinically euthyroid as per **Table – 5**. All Diffuse Goitres and Solitary Nodules regressed in size with thyroxine therapy. The Multi Nodular Goitres showed no change in size. All 105 patients were treated conservatively. 15 patients underwent surgery, 6 patients for obstructive symptoms, other 9 patients underwent subtotal thyroidectomy for colloid goitres and histopathology revealed as Hashimoto's Thyroiditis (**Figure – 3**).

**Table - 5:** Clinical and laboratory findings.

Clinical/ Laboratory findings	Euthyroid	Hypothyroid	Hyperthyroid
No. of Cases	42	57	21
Diffuse Goitre	15	24	3
Multi Nodular Goiter	24	33	18
Solitary Nodular Goiter	3	-	-
Both Antibodies positive	18	27	15
Both Antibodies negative	-	15	-
Only AMA positive	18	12	6
Only ATG positive	6	3	-

### Discussion

During this study period, 120 patients were detected to have Hashimoto's Thyroiditis either by FNAC, Antibody titres or final Histopathology reports. Female preponderance was a well established feature of thyroid diseases and this study also having a strong female preponderance with 117 females and 3 males, the male to female ratio being 1: 39. This coincides with the observations made by Sharma, et al. [2], Joseph, et al. [3], and Fenn, et al. [4], all of who observed a female preponderance, with a male to female ratio of 1: 13, 1: 12 and 1:14 respectively.

**Figure – 1:** Multi Nodular Goitre.



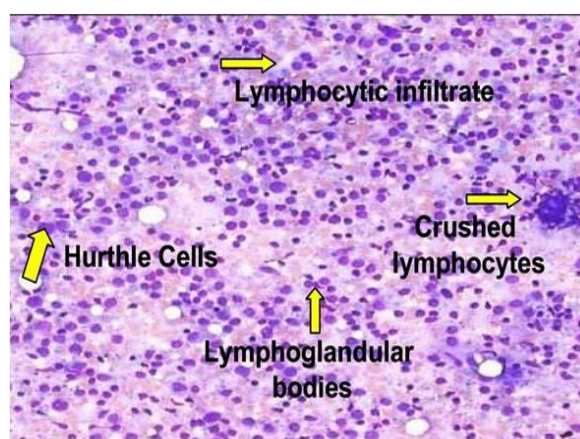
In our study, the age incidence ranged from 12 years to 55 years, the youngest being a 12 years old girl and oldest being a 55 year old woman. The average age in this study was 33.45 years and highest incidence being in the 30 - 39

year age group. Lakshman Rao, et al. [5] had an average age of 40.4 years in this study and Fenn, et al. [4] observed that the most patients were in between 4<sup>th</sup> and 5<sup>th</sup> decade of their life.

**Figure – 2:** Diffuse Goitre.



**Figure – 3:** Histopathology of Hashimoto's thyroiditis.





All the patients presented with a swelling in the front of the neck, 21 patients with additional features suggestive of hyperthyroidism and 6 patients presented with the additional features of obstruction. All the goitres were firm in consistency. In this study, the majority of the cases were Multi Nodular Goitres (62.5%), Diffuse Goitres (35%) and Solitary Nodules (2.5%). Similarly Rao KS [6], in his series reported a predominance of Multi Nodular Goitres. However, Kusum Kapila, et al. [7], in their observations had a preponderance of Diffuse Goitres (55.8%), Multi Nodular Goitre (18.3%) and Solitary Nodules (25.9%). In this study the Hypothyroid (47.5%), Euthyroid (35%) and Hyperthyroid (17.5%) were accounted. In the studies of Fenn, et al. [4] and Kusum Kapila, et al. [7], the Euthyroid patients amounted for 46.66% and 79.30% ; the Hypothyroid patients for 44.44% and 10.10% and the Hyperthyroid patients for 6.66% and 6.90% respectively.

In this study 15.6% of the patients were in subclinical Hypothyroidism and compared to the study of Marhawa, et al. [8] 18.60% of the patients were in subclinical Hypothyroidism. In this study FNAC was positive in 92.5% of the cases, in sharp contrast to the observation made by Lakshmana Rao, et al. [5] who with a 14-16 gauge needle achieved an accuracy of 77.70%

In this study, 87.5% of the cases had thyroid Autoantibodies positive. The series of Hasabat, et al. [9] and Lakshmana Rao, et al. [5] reported thyroid Autoantibodies positivity of 63% and 83.34% respectively. In this study, in the Hypothyroid group at presentation, thyroid Autoantibodies were positive in 66.6% of cases, in the Euthyroid and Hyperthyroid groups the thyroid Antibody positivity was 100%. Hasabat, et al. [9] reported thyroid Autoantibody positivity of 55% in hypothyroid and 37% in hyperthyroid groups respectively. In this study, patients with Hyperthyroidism were more positive (100%) for Anti TPO Antibody than other group of patients. The patients were followed up regularly at intervals of 3 months, and at every visit the pulse, weight, consistency of the gland and size

of the neck were recorded .All the Hypothyroid and Hyperthyroid patients were given thyroxine replacement and thyroxine suppression therapy respectively and monitored clinically. Eventually all the patients were found to be clinically Euthyroid. All the patients with Diffuse Goitres and solitary Nodules were given hormonal therapy with thyroxine showed a decrease in size of the gland that was appreciated by manual palpation and by measuring the size of the gland. The patients with Multi Nodular Goitres showed no change in size of the gland. 15 patients underwent surgery, 9 patients with colloid goitre underwent subtotal thyroidectomies, but on Histopathology diagnosed as Hashimoto's Thyroiditis. Surgery was done for the other 6 patients for obstructive symptoms. We could not find out the incidence of lymphoma in patients with Hashimoto's Thyroiditis as the follow up period was short. But the relative risk of a patient with lymphocytic thyroiditis developing lymphoma has been estimated to be 40 to 80 times more compared to general population.

## Conclusion

Females are more prone to develop Hashimoto's Thyroiditis. It has a varied clinical presentation as a Diffuse Goitre, a Multi Nodular Goitre or a Solitary Nodule and present in a Hypothyroid or Euthyroid or in a small proportion of the patients in a hyperthyroid state. Diagnosis of Hashimoto's Thyroiditis could be done by FNAC, positive Antibody titres or final Histopathology. Anti TPO antibody positivity is high in patients who are having Hashimoto's Thyroiditis and presenting in Hyperthyroidism. Treatment is primarily medical with thyroxine replacement or suppression therapy and surgery is rarely required. Diffuse Goitres and Solitary Nodules respond better to the medical line of management compared to Multi Nodular Goitres.

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