

# Hashimoto's thyroiditis: A bone of contention between clinical thyroid malignancy and histological thyroiditis

*A disconcerting case-report*

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## **Abstract:**

**INTRODUCTION:** Hashimoto's thyroiditis is a prototype of auto-immune thyroiditis described by Hakaru Hashimoto of Japan in the year 1912. Hashimoto's thyroiditis more common in adolescent females than in males. It presents with varied clinical features with its clinic-radiological features overlapping with thyroid malignancy often with discordance with final histopathological findings.

## **CASE REPORT**

41-year-old female presented with a midline neck swelling for three years, which lately caused dyspnea for the last four months. Radiological examination [TIRADS IV] and clinical correlation suggested a diagnosis of thyroid malignancy. Histopathological diagnosis of the subtotal thyroidectomy specimen was Hashimoto's thyroiditis, which was supported relevant immunological studies of elevated anti-TPO antibodies.

## **CONCLUSION**

In the present case clinic-radiological diagnosis of the neck lesion being thyroid malignancy [TIRADS IV] was at variance with final histopathological diagnosis of Hashimoto's thyroiditis supported by elevated anti-TPO antibodies, which highlighted the diagnosis of Hashimoto's disease to be a bone of contention between clinical thyroid malignancy and histological thyroiditis.

**Index Terms:** *Thyroiditis, Bethesda IV, Hashimoto, Hurthle cells*

## **I. INTRODUCTION**

Chronic autoimmune thyroiditis also known as chronic lymphocytic thyroiditis and Hashimoto thyroiditis (named after Japanese physician Hakaru Hashimoto in 1912) is a prototype of autoimmune disorders in human beings<sup>1,2</sup>. Described as an autoimmune disorder it was demonstrated for the first time that there is destruction of thyroid parenchymal cells due to antibody-mediated immune mechanism. Though commonest cause of hypothyroidism, globally, is decreased dietary intake of iodine, particularly in countries in arid zone, similar kind of hypothyroidism is common in developed nations which is mainly the result of Hashimoto's thyroiditis [3]. Hashimoto's thyroiditis is more common in young females with marked female preponderance with female-to-male ratio being 10:1. In this condition, antibodies are products against thyroid tissue, particularly certain organelles and their products such as microsomal antibodies, anti-TPO, anti-thyroglobulin antibodies, and this leads to destruction of thyroid tissue with consequent fibrosis and focal reactive hyperplastic change in unaffected residual thyroid parenchyma in earlier period of disease process. This is often elicited in laboratory findings as elevated levels of thyroid-stimulating hormone (TSH) and low levels of free thyroxine (FT4). Sometimes, in initial stage, when the process of destruction of thyroid tissue is low, laboratory findings may show features of hyperthyroidism or euthyroid.<sup>3</sup>

Hashimoto's thyroiditis presents with varied clinical features which often overlap clinical features simulating thyroid malignancy on clinical and radiological examination with possible undesirable consequences, and medical literature is highlighted by reports of some glaring discrepancies in clinic-radiological diagnosis and histopathological diagnosis.

The case report being published here pinpoints this discrepancy which often becomes a clinic-radiological and histopathological matter of avoidable altercation.

## **II. CASE REPORT**

A 41-year-old female presented to the out-patient department of a tertiary care hospital with complaints of diffuse mid-line swelling in neck for three years. Of late, the patient developed dyspnea for four months. Patient's past history revealed that she was taking medicines for the treatment of hyperthyroidism for the last one and half years. Laboratory investigations showed unremarkable thyroid profile with the following laboratory values: serum T3 – 165ng/dl, T4- 9.30mcg/dl and TSH- 1.6mIU/L.

On clinical examination, there was nodular, asymmetrical enlargement of right lobe of thyroid, which measured 5 x 4 cm in size, while left lobe measured 2 x 1 cm, both being firm to hard in consistency. Ultrasound report revealed a nodule in the right lobe suspicious for malignancy (TIRADS IV). Fine Needle Aspiration Cytology (FNAC) report from outside clinical facility, which was done one month back, showed right lobe swelling suspicious of neoplasm (Bethesda IV) and left lobe swelling showed benign

lesion consistent with colloid/nodular goiter (Bethesda II). Since the FNAC and ultrasound findings were suspicious for malignancy, an intra-operative frozen section was planned.

### III. GROSS, MICROSCOPY

#### Gross examination

A specimen of subtotal thyroidectomy was received in the department of Pathology of a tertiary care hospital.

Right lobe: single grey-brown, soft-firm tissue piece measuring 5 x 3 x 3cm. External surface showed cystic areas with nodularity at upper pole. On cut-section, multiple hemorrhagic areas with single whitish nodule measuring 2 x 1.5 cm were noted.

Isthmus: single grey-brown, soft-firm tissue piece measuring 5 x 2 x 1 cm.

#### Microscopy

Frozen section was conducted intra-operatively and histomorphology findings on frozen sections were suggestive of nodular goiter with cystic change with associated features of lymphocytic thyroiditis in right lobe and isthmus (? auto-immune thyroiditis or Hashimoto's thyroiditis).

The final histological findings from permanent (paraffin) sections were consistent with lymphocytic thyroiditis suggestive of auto-immune thyroiditis with secondary goitrous change.

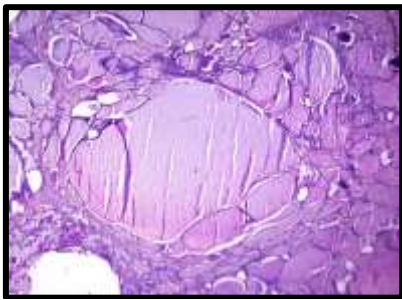


Fig 1: Thyroid follicles with abundant colloid

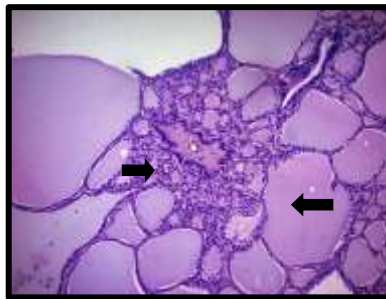


Fig 2: Hurthle Cells in 10x

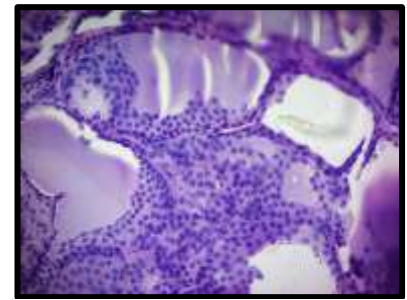


Fig 3: Hurthle cells in 40x

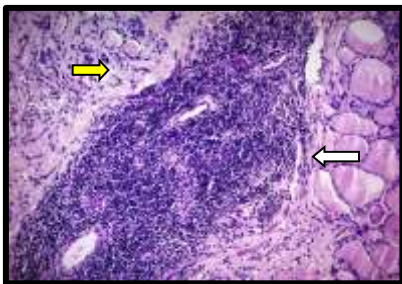


Fig. 4 and 5: Lymphocyte aggregates (white arrow) amidst fibrosis (yellow arrow). center

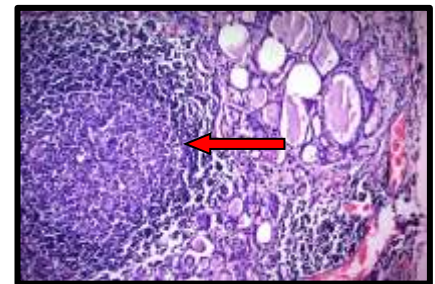
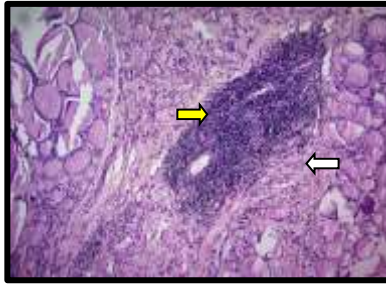


Fig 6: Lymphoid follicle with germinal center

### IV. CASE DISCUSSION

In this case, a clinic-radiological diagnosis of a suspected malignancy was made for which, providentially, frozen section was also done. On histopathological examination, considered as gold standard, a final diagnosis of lymphocytic thyroiditis suggestive of Autoimmune thyroiditis (Hashimoto's thyroiditis) with goitrous change was made. Post-surgery, relevant immunological studies were conducted such as Anti-TPO which was conclusive for auto-immune thyroiditis.

In a similar case reported by Kanaya *et al* that was precluded clinically and radiologically to be a case suspicious of thyroid malignancy, which was later conclusively diagnosed as auto-immune thyroiditis after histopathological examination<sup>4</sup>.

Contrarily, Vukasovic A. *et al* published a case report of a thyroid lesion which was clinically and radiologically diagnosed as Hashimoto's thyroiditis. Histopathological examination of the resected thyroid specimen and relevant immunological studies confirmed it to be a case of diffuse sclerosing variant of thyroid carcinoma<sup>5</sup>. Also there has been a controversy among different schools of thought regarding the use of frozen section in thyroid lesions, albeit intra-operative frozen is insisted upon and requisitioned by some experts. Cetin B *et al* and Najah H *et al* in their articles have mentioned the usefulness of frozen sections, especially in Bethesda IV thyroid lesions.<sup>6,7</sup>

### V. CONCLUSION

It is noticed often that English Medical literature is spotlighted by reports of discrepancy in diagnosis of malignant and benign lesions in general, both clinically and histologically. It is familiar to all concerned that there is an overlap of clinical features and radiological findings of various thyroid neoplastic and non-neoplastic conditions such as thyroid malignancy and auto-immune thyroiditis, particularly Hashimoto thyroiditis. This has often led to misdiagnosis of neoplastic and non-neoplastic lesions of thyroid on the basis of clinical and radiological correlation. The onus often is thrust upon the Pathologist to come out conclusively on the nature of the lesion that often leads to an absolutely non-neoplastic condition such as Hashimoto's thyroiditis becoming a bone of contentions between clinical thyroid malignancy and pathological thyroiditis as emphasized by the present case report.

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