

# Hashimoto Thyroiditis in a lingual thyroid: an interesting case

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### Introduction

Hashimoto thyroiditis, also recognized as chronic lymphocytic thyroiditis, is an autoimmune condition marked by inflammation in the thyroid gland, causing hypothyroidism<sup>1</sup>. Occasionally, thyroid tissue can appear in unusual locations during embryonic development, a phenomenon referred to as ectopic thyroid tissue<sup>2</sup>. Among the rarest forms of ectopic thyroid tissue is lingual thyroid, where thyroid tissue is located at the base of the tongue<sup>2</sup>. Although lingual thyroid itself is uncommon, the simultaneous presence of Hashimoto thyroiditis within lingual thyroid tissue is an even more extraordinary and puzzling phenomenon<sup>3</sup>.

In this particular case study, we explore a captivating instance of Hashimoto thyroiditis identified within a lingual thyroid and presenting as oropharyngeal mass in a young female patient. Despite the individual rarity of these conditions, the occurrence of Hashimoto thyroiditis within the lingual thyroid presents distinctive challenges concerning its diagnosis and management. Recognizing such exceptional manifestations is essential for healthcare professionals to deliver precise diagnoses, suitable treatments, and enhanced understanding of the fundamental mechanisms underlying autoimmune thyroid disorders.

### Clinical History

A young female patient presented to the outpatient department of a tertiary care centre with the history of gradually increasing growth in throat for 3 months. Because of the growth, the patient had difficulty in swallowing and feeling of something stuck in the throat. She also complained of irregular periods, lethargy, weight gain and loss of appetite for the same duration of time. On examination, a growth of approximately 3 x 2.5 cm size was present in base of tongue. The lesion was pinkish in colour with visible vessels on surface, firm to touch with tongue depressor (fig: 1). No ulceration was present in the growth.

**Differential Diagnosis:** On the basis of history and clinical examination, following differential diagnosis were considered.

1. Lingual thyroid
2. Lingual thyroglossal cyst
3. Lingual tonsil
4. Hemangioma
5. Salivary gland tumour

### Investigations:

**Imaging findings:** Ultrasonography of neck was done for further evaluation. Ultrasonography revealed absence of thyroid gland in expected anatomical location (fig: 2). No history of thyroid surgery was present. A soft tissue structure measuring 3.0 x 2.6 x 1.7 cm was seen in suprahyoid location abutting floor of mouth in midline. Internal vascularity was seen within the structure. Echotexture of the structure was mildly

heterogeneous (fig: 2). The patient was counselled about possibility of lingual thyroid. But the parents were too apprehensive and wanted to rule out malignancy. An ultrasound guided fine needle aspiration cytology was done on patient's request. In cytology, follicular cells were seen confirming the structure to be thyroid gland. Lymphocytes were seen impinging on the follicular cells (fig: 3). Diagnosis of chronic lymphocytic thyroiditis was made.

**Thyroid function test:** Thyroid function test was done which showed hypothyroidism. TSH- 12.3 mIU/mL (normal range 0.4 – 4 mIU/mL) free T4- 0.9 ng/dL (normal range 0.5 – 1.2 ng/dL) and T3 – 135 ng/dL (normal range 100 – 200 ng/dl). Anti TPO antibody level was 95IU/mL (normal value < 26 IU/mL). Patient was diagnosed as case of chronic lymphocytic thyroiditis.

## Discussion

Lingual thyroid represents 90% of all cases of ectopic thyroid<sup>2,4</sup>. Hickmann recorded the first case of lingual thyroid in 1869<sup>5</sup>. It is a rare embryogenic anomaly and results from failure of descend of thyroid from foramen caecum to its normal entopic prelaryngeal location<sup>6</sup>. The prevalence rate varies from 1:100,000 to 1:300,000(3). Female to male ratio ranges from 3:1 to 7:1<sup>7</sup>. Lingual thyroid may be asymptomatic, incidentally discovered during clinical examination. It may present as a sooth lobulated mass in throat. The mass can cause obstruction of oropharynx and cause dysphagia, foreign body sensation in throat, dyspnoea, stridor, snoring etc<sup>8</sup>. Other symptoms might result from thyroid insufficiency. Features of hypothyroidism like weight gain, tiredness, menstrual irregularity, loss of appetite maybe present. Very rarely, lingual thyroid can undergo malignant transformation. Malignancy in entopic thyroid gland is mostly papillary carcinoma. Contrary to it, malignancy in ectopic thyroid gland is mostly follicular carcinoma<sup>2</sup>. The malignant mass presents as an ulcerative, rapidly growing mass in throat. Imaging is the modality of choice for diagnosis. Ultrasonography is the most convenient and easy one. It has no radiation. The most consistent finding is absence of thyroid gland in its entopic location. Thyroid tissue may be found along the path of descend of thyroid gland. Sometimes the gland maybe hypoplastic and not visualized in ultrasound<sup>9</sup>. CT is another modality but often avoided due to radiation. In non-contrast CT, thyroid gland is hyperdense and show homogeneous post contrast enhancement<sup>10</sup>. Lingual thyroid is seen at base of tongue, between sulcus terminalis and epiglottis. In MRI, lingual thyroid is seen as a non-invasive mass in base of tongue. Thyroid tissue is iso to hyperintense in T1 weighted image. In T2 weighted image, thyroid can be hypo to iso to hyperintense. In post contrast images, homogeneous enhancement is seen<sup>6</sup>. Scintigraphy with Tc-99m is another reliable diagnostic tool. Absence of isotope uptake in cervical region and presence of uptake in oropharynx points towards diagnosis of lingual thyroid<sup>11</sup>.

**Outcome :** The patient was given levothyroxine suppression therapy. Patient was followed after 1 month. The mass was markedly reduced in size. The patient was euthyroid. Maintenance done of levothyroxine was given and regular follow up was done. Other therapeutic options can be surgical removal and radioactive iodine ablation<sup>11</sup>. Surgery is reserved for patients with severe symptoms refractory to medicines. Radioactive iodine is avoided in children and young adults<sup>11</sup>.

## Author Contributions

**Prajwal Dahal:** Conceptualization, manuscript writing, supervision.

**Sabina Parajuli:** Interpretation of cytology, software, analysis.

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