

CASE REPORT

Hashimoto thyroiditis in a lingual thyroid: An interesting case

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Key Clinical Message

Whenever an enlarging mass is seen in throat, possibility of lingual thyroid should be considered. Thyroid function test should be done whenever ectopic thyroid is detected. Imaging (ultrasonography or Tc-99m scintigraphy) is adequate for diagnosis. Conservative treatment with levothyroxine helps in reducing size of lingual thyroid.

Abstract

Hashimoto thyroiditis in lingual thyroid results in enlargement of the thyroid gland and oropharyngeal symptoms. Suppression therapy with levothyroxine results in reduction in size of the gland. We present an interesting case of Hashimoto disease in an adolescent female presenting as oropharyngeal mass.

KEYWORDS

case report, Hashimoto disease, lingual thyroid, oropharynx

1 | INTRODUCTION

Hashimoto thyroiditis, also recognized as chronic lymphocytic thyroiditis, is an autoimmune condition marked by chronic inflammation of thyroid gland, causing hypothyroidism.¹ Occasionally, thyroid tissue can appear in unusual locations during embryonic development, a phenomenon referred to as ectopic thyroid tissue.² Lingual thyroid is the commonest form of ectopic thyroid, where thyroid tissue is located at the base of the tongue.² The simultaneous presence of Hashimoto thyroiditis within lingual thyroid tissue is an uncommon phenomenon.³

In this particular case study, we explore an instance of Hashimoto thyroiditis identified within a lingual thyroid and presenting as oropharyngeal mass in a 13-year-old female patient. Despite the rarity of coexistence of these conditions, the occurrence of Hashimoto thyroiditis

within the lingual thyroid presents distinctive challenges concerning its diagnosis and management. Recognizing such conditions is essential for health care professionals to deliver precise diagnoses, suitable treatments, and enhanced understanding of the fundamental mechanisms underlying autoimmune thyroid disorders.

2 | CLINICAL HISTORY

A 13-year-old female patient of Indo-Aryan heritage presented to the outpatient department of a tertiary care center 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

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same duration of time. On examination, a growth of approximately 3×2.5 cm size was present in the base of the tongue. The lesion was pinkish in color with visible vessels on surface, firm to touch with tongue depressor (Figure 1). No ulceration was present in the growth. There is no history of thyroid disorders in her family.

2.1 | Differential diagnosis

On the basis of history and clinical examination, the following differential diagnosis were considered.

1. Lingual thyroid,
2. Lingual thyroglossal cyst,
3. Lingual tonsil,
4. Hemangioma, and
5. Salivary gland tumor.

2.2 | Investigations

2.2.1 | Imaging findings

Ultrasonography of neck was done for further evaluation. There was absence of thyroid gland in expected anatomical location (Figure 2A). No history of thyroid surgery was present. A soft tissue structure measuring 3.0×2.6×1.7 cm was seen in suprahyoid location abutting

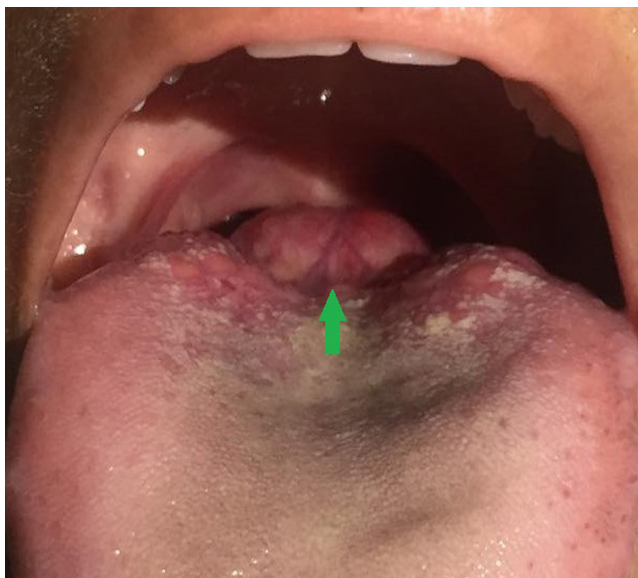


FIGURE 1 A soft tissue structure with smooth margins observed in the oropharynx (green arrow). The lesion appears pink in color, and vessels are visible coursing along its surface. Further clinical assessment is necessary to determine the nature and significance of this finding.

floor of mouth in midline. Internal vascularity was seen within the structure. Echotexture of the structure was mildly heterogeneous (Figure 2B). The patient was counseled 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 (Figure 3). Diagnosis of chronic lymphocytic thyroiditis was made.

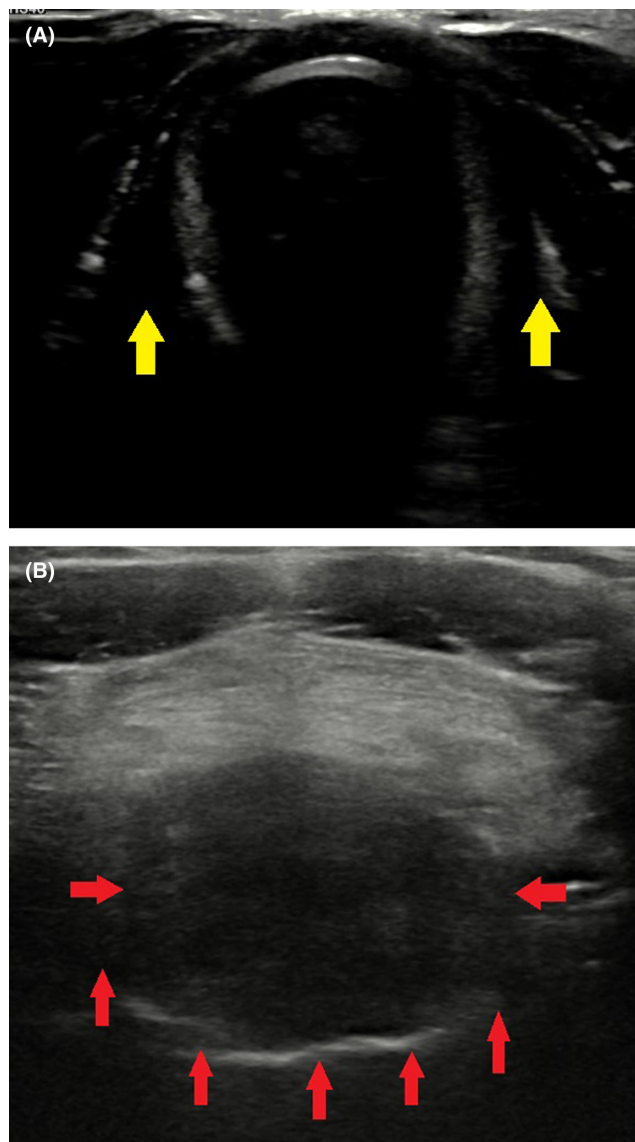


FIGURE 2 (A) Ultrasonography images of the neck at the expected anatomical location of the thyroid gland (yellow arrows). The thyroid gland is not visualized. (B) A soft tissue structure is visualized in the suprahyoid location, abutting the floor of the mouth (red arrows). The echotexture of the soft tissue structure is mildly heterogeneous.

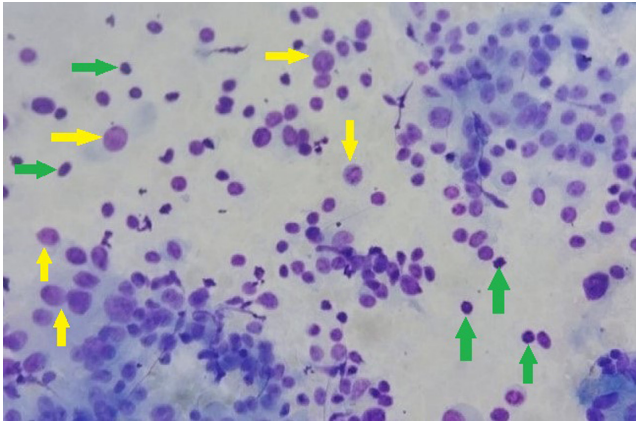


FIGURE 3 Cytology section of the structure revealing follicular cells (yellow arrows), confirming it to be thyroid tissue. Multiple lymphocytes are observed in the background (green arrows), indicating a diagnosis of chronic lymphocytic thyroiditis.

2.2.2 | Thyroid function test

Thyroid function test was done, which showed hypothyroidism. Thyroid-stimulating hormone (TSH)—13.3 mIU/mL (normal range 0.4–4 mIU/mL), free thyroxine (T4)—0.4 ng/dL (normal range 0.5–1.2 ng/dL), and triiodothyroxine (T3)—120 ng/dL (normal range 100–200 ng/dL). Anti-thyroid peroxidase antibody level was 200 IU/mL (normal value <26 IU/mL). Antithyroglobulin antibody was 223 IU/mL (normal <116 IU/mL), and TSH receptor-blocking antibody (TB II) was within normal limit. Patient was diagnosed as a case of chronic lymphocytic thyroiditis with hypothyroidism.

2.3 | Outcome and follow-up

The patient was given levothyroxine 80 µg/day. Patient was followed after 1 month. The mass was markedly reduced in size. The patient was euthyroid. 50 µg/day levothyroxine was given as maintenance dose, and regular follow-up was done. Other therapeutic options can be surgical removal and radioactive iodine ablation.⁴ Surgery is reserved for patients with severe symptoms refractory to medicines. Radioactive iodine is avoided in children and young adults.⁴ The patient was referred to endocrinologists for evaluation of other autoimmune disorders like type 1 diabetes mellitus and adrenal insufficiency. Workup was done for pernicious anemia and coeliac disease. No other associated diseases were present.

3 | DISCUSSION

Lingual thyroid represents 90% of all cases of ectopic thyroid.^{2,5} Hickmann recorded the first case of lingual thyroid

in 1869.⁶ It is a rare embryogenic anomaly and results from failure of descent of thyroid from foramen caecum to its normal entopic prelaryngeal location.⁷ The prevalence rate varies from 1:100,000 to 1:300,000.³ Female-to-male ratio ranges from 3:1 to 7:1.⁸ Lingual thyroid may be asymptomatic, incidentally discovered during clinical examination. It may present as a smooth lobulated mass in throat. The mass can cause obstruction of oropharynx and cause dysphagia, foreign body sensation in throat, dyspnea, stridor, snoring, etc.⁹ Other symptoms might result from thyroid insufficiency. Features of hypothyroidism like weight gain, tiredness, menstrual irregularity, and loss of appetite may be 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.² 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 descent of thyroid gland. Sometimes the gland may be hypoplastic and not visualized in ultrasound.¹⁰ Computed tomography (CT) is another modality but often avoided due to radiation. In noncontrast CT, thyroid gland is hyperdense and shows homogeneous postcontrast enhancement.¹¹ Lingual thyroid is seen at the base of the tongue, between sulcus terminalis and epiglottis. In magnetic resonance imaging, lingual thyroid is seen as a noninvasive 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 postcontrast images, homogeneous enhancement is seen.⁷ Scintigraphy with technetium (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.⁴

AUTHOR CONTRIBUTIONS

Prajwal Dahal: Conceptualization; project administration; supervision; writing – original draft. **Sabina Parajuli:** Investigation; software; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest regarding the publication of this paper.

DATA AVAILABILITY STATEMENT

The data used in the manuscript will be available for review by the editor-in-chief of this journal if requested.

ETHICS STATEMENT

The need for ethical approval was waived and consent from patient's guardian was deemed sufficient.

CONSENT

Written informed consent was obtained from the patient's guardian to publish this report in accordance with the journal's patient consent policy.

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