

CASE REPORT

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Incidental lingual thyroid with subclinical hypothyroidism: case report



Turki Abdul Kareem al Driveesh¹, Mohammad Mosa Mokhatrish¹, Tahera Islam^{2*}  and Khalid H. Al-Qahtani³

Abstract

Background: Lingual thyroid is a very rare pathological finding and is usually incidentally discovered. It occurs when a defect in embryogenesis gives rise to ectopic thyroid as tongue base mass. Majority of patients are asymptomatic. This clinical case highlights the importance of performing thyroid function tests for all lingual thyroid patients regardless of symptoms or clinical presentation.

Case presentation: We present a 25-year-old lady who presented with sub-mental abscess. A CT scan was performed to confirm the diagnosis. The CT scan confirmed submental abscess and incidentally discovered lingual thyroid along with absence of thyroid tissue in its normal pretracheal position. The patient denied any symptoms of hypothyroidism. But subsequent investigations revealed clinical hypothyroidism. She was started on substitutive hormone therapy and remains asymptomatic.

Conclusion: Lingual thyroid patients may remain asymptomatic with subclinical hypothyroidism. Hormone therapy needs to be initiated in these patients.

Keywords: Lingual thyroid, Hypothyroidism, Congenital anomaly, Ectopic thyroid, Case report

Key messages

Patients with hypothyroidism due to ectopic thyroid may remain symptom free and only come to attention after thyroid function test are carried out. Thyroid function tests are warranted whenever lingual thyroid is diagnosed irrespective of clinical presentation.

Background

Lingual thyroid is a rare embryological aberration resulting from the arrest of downward migration of the thyroid gland. Ninety percent of thyroid ectopia involves the lingual region [1]. Majority of patients are asymptomatic and are diagnosed incidentally through head and neck radiography. The most common presentation of symptomatic lingual thyroid is a mass in the midline at the base of the tongue. Depending on the size of the mass, some patients

may present with more severe symptoms such as dysphagia, dysphonia, dyspnea, and hemorrhage [2].

The prevalence of lingual thyroid ranges from 1 in 100,000 to 300,000; the prevalence is approximately 4 to 8 times higher in females than in males [2]. Thyroid tissue is absent in the normal location in 70–80% of patients with lingual thyroid, and approximately one third of patients are hypothyroid [2]. Frequently, in these patients, lingual thyroid is detected during the diagnostic investigation of subclinical hypothyroidism. Here, we report a woman who presented with submental abscess confirmed on CT scan, along with an incidental diagnosis of with lingual thyroid. Although the patient did not demonstrate any symptoms of hypothyroidism, further laboratory investigations revealed subclinical hypothyroidism. This clinical case highlights the importance of performing thyroid function tests for all lingual thyroid patients regardless of symptoms or clinical presentation.

* Correspondence: tahera@ksu.edu.sa

²College of Medicine and Research Center, King Abdul Aziz University Hospital, King Saud University, PO Box no-245, Riyadh 11411, Kingdom of Saudi Arabia

Full list of author information is available at the end of the article



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Case presentation

A 25-year-old woman visited the clinic with the complaint of submental swelling for 2 weeks. Skin rash and multiple cervical swelling preceded the submental swelling by 2 weeks. She had previously sought medical advice and prednisolone and antibiotics had been prescribed. Her rash improved but the submental swelling remained unchanged. Neck clinical examination showed a firm, non-mobile, nontender, 3 × 4 cm submental mass. Apart from this, the otolaryngology examination was unremarkable. She had no other systemic complaints.

We suspected the presence of a submental abscess; accordingly, the patient was referred for head and neck contrast computed tomography (CT). The scan demonstrated submental fluid collection (approximately 2 × 1 cm) with rim enhancement; these results confirmed our diagnosis. The CT scan also revealed existence of an unusual lesion—a well-defined, rounded lesion mainly of hyperdense soft tissue density—in the midline of the base of the tongue. It measured around 2 × 2 cm. The CT scan showed small, internal hypodense areas that enhanced diffusely after administration of contrast. Along with these observations, the contrast CT failed to visualize normal thyroid density in the pre-tracheal area. These image findings were suggestive of ectopic thyroid at the

tongue base, as shown in Figs. 1 and 2. This confirmed the diagnosis of a coexisting lingual thyroid. Considering the absence of normal thyroid tissue in the normal position, further investigations were recommended. A thyroid function panel revealed hypothyroidism based on the following results: thyroid-stimulating hormone level, 90.6 mIU/L (normal range, 0.25–5 mIU/L); free triiodothyronine level, 4.09 pmol/dL (normal range, 3.95–9.5 pmol/dL); and free tetraiodothyronine level, 9.88 pmol/L (normal range, 10.3–25.8 pmol/L). She was referred to an endocrinologist for her hypothyroidism.

The patient was admitted, and aspiration of the fluid collection was performed. Furthermore, she was started on intravenous antibiotics. Within a couple of days, the patient’s condition improved dramatically; thus, she was discharged. We decided to manage the lingual thyroid conservatively and she was started on substitutive hormone therapy. Currently, she has regular follow-ups with the endocrinologists and remains euthyroid.

Discussion

The thyroid gland starts to develop at the 3rd week of gestation; development by descent along the thyroglossal tract to the final pre-laryngeal position is completed at the 7th week. This tract degenerates as the thyroid reaches its final position at the level of hyoid bone. Arrest of thyroid embryogenesis at any stage of descent gives rise to multiple anomalies including ectopic thyroid [3].

Lingual thyroid constitutes the majority of ectopic thyroid cases; however, remnants of thyroid tissue have been documented in different positions along the migration tract [4]. In almost 70% of patients, eutopic thyroid tissue was absent; however, few cases of dual thyroid have also been documented [1, 5]. A considerable number of patients (up to 70%) presented with hypothyroidism, similar to our patient. Surprisingly, some presented with hyperthyroidism [6]. Urgent intervention is required for patients presenting with dysphagia, dysphonia, dyspnea, or hemorrhage.

The diagnostic work-up for lingual thyroid includes CT, magnetic resonance imaging, technetium scanning, and fine needle aspiration [7]. Thyroid function tests are used to evaluate the functional status of the thyroid gland.

The treatment strategy for lingual thyroid is a controversial issue. In general, for asymptomatic cases with normal thyroid status, patients can be monitored with frequent follow-ups. In case of hypothyroidism, like in our patient, thyroid replacement therapy is initiated, which further aims to simultaneously shrink the ectopic tissue [4]. Surgical intervention is reserved for failure of medical treatment, such as in case of compressive symptoms or bleeding masses. In some cases, lifelong hormone replacement may be needed.



Fig. 1 Head and neck contrast-enhanced axial computed tomographic scan showing a hyperdense soft tissue density in the midline at the base of the tongue (arrow)



Fig. 2 Sagittal view of contrast-enhanced CT showing lingual thyroid: a well-defined, rounded, mainly hyper-dense soft tissue density at the base of the tongue (blue arrow); submental abscess (yellow arrow)

Conclusions

Lingual thyroid is a rare clinical entity. Patients may remain asymptomatic and are diagnosed incidentally even though there is biochemical evidence of hypothyroidism. Good knowledge of embryogenesis will result in proper diagnosis. Hormone replacement therapy with thyroxine should be started in apparently asymptomatic patients, when there is evidence of hypothyroidism. Patients should be monitored through follow-ups for the development of complications like dysphagia or dyspnea or, in very rare circumstances, carcinoma.

Abbreviations

CT: Computed tomography

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Not applicable.

Authors' contributions

TD drafted the manuscript, approved the submitted version, is personally accountable for the author's own contributions, and ensured that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature. MM drafted the manuscript, approved the submitted version, is personally accountable for the author's own contributions, and ensured that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature. TI revised the article, is personally accountable for the author's own contributions, and ensured that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated,

resolved, and the resolution documented in the literature. KQ is the treating consultant, revised the article, is personally accountable for the author's own contributions, and ensured that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature. All authors have read and approved the manuscript.

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Consent for publication

Verbal consent was obtained from the patient for publication of this case report and accompanying images.

Competing interests

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Author details

¹Department of Otolaryngology-Head & Neck Surgery, College of Medicine, Prince Sattam University, Alkharj, Kingdom of Saudi Arabia. ²College of Medicine and Research Center, King Abdul Aziz University Hospital, King Saud University, PO Box no-245, Riyadh 11411, Kingdom of Saudi Arabia. ³Department of Otolaryngology-Head & Neck Surgery, King Abdulaziz University Hospital, College of Medicine, King Saud University, Riyadh, Kingdom of Saudi Arabia.

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