



## A Case of Lingual Thyroid

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### Abstract

Lingual thyroid gland is a rare clinical entity which was found to occur due to the failure of the thyroid gland to descend into its normal ectopic pretracheal position location during embryogenesis. The reported incidence of lingual thyroid is 1 in 100,000, and it is more common in females, with a female:male ratio of 3:1. When located at the base of the tongue, ectopic gland is often asymptomatic but may cause local symptoms such as dysphagia, dysphonia, upper airway obstruction, hemorrhage and often with hypothyroidism. The diagnosis of lingual thyroid is usually made clinically and radionuclide scanning is used to confirm diagnosis. A case of lingual thyroid is presented for its rarity and for differential diagnosis of midline base of the tongue lesions. A 35-year-old female presented with complaints of increasing difficulty in breathing and a constant Foreign Object Sensation in the Throat (FOSIT) for the past year. Flexible video-laryngoscopic examination, revealed a well demarcated mid-line tongue base lesion measuring 3 cm × 3 cm. Technetium 99m scan reported it to be ectopic thyroid and tissue. Transoral excision of the lesion was done along with cauterization with bipolar cautery.

**Keywords:** Lingual thyroid; Ectopic thyroid; Dyspnoea

### Case Presentation

We report a case of a 35-year-old female who presented with complains of difficulty in breathing and FOSIT. Flexible video-laryngoscopic examination revealed a midline base of tongue, 3 cm × 3 cm mass that was covered with normal mucosa in the base of the tongue. The surface of the swelling was normal without any signs of ulceration, bleeding or pus. However, numerous anastomosing blood vessels were seen over the mucosa of the swelling (Figure 1). A provisional diagnosis of lingual thyroid was made based on its location and symptomatology further investigations were carried out. The serum thyroid profile of the patient was taken which was reported to be within normal limits. Technetium 99m thyroid scan revealed a midline focal area of increased isotope uptake in the lingual region and an absence of isotope uptake at the root of the neck, i.e. at normal location of the thyroid gland (Figure 2). The patient was provisionally diagnosed as having lingual thyroid and was advised regarding lifelong thyroxin replacement in-light of the above diagnosis; for which she was very keen to proceed with surgery despite the long term morbidity. Trans-oral surgical resection under general anesthesia with a naso-tracheal intubation. Surgical steps included the usage of a Boyle-Davis mouth gag and bipolar cautery forceps, a cuff of normal tongue base tissue was also removed to take the swelling in its entirety (Figure 3). The grossly resected specimen measured 3 cm × 3 cm and firm in consistency (Figure 4). Her postoperative recovery was uneventful, voice and diet restorations were immediate. A post-operative video-laryngoscopy was carried out on day 5 revealing a healthy and healing mucosa at the resected site with no signs of slough, pus or bleeding (Figure 5). Postoperatively our patient was commenced on thyroid replacement treatment and has been reviewed by our endocrine colleagues, as part of a multi-disciplinary approach in managing endocrine conditions.

### Discussion

Lingual thyroid is defined as the presence of thyroid tissue in the midline at the base of the tongue anywhere between the circumvallate papillae and the epiglottis [1]. It is cause due to aberrant embryogenesis during the descent of thyroid gland to the neck [2]. Hickmann recorded the first case of lingual thyroid in 1869 [3]. Lingual thyroid arises due to embryonic failure of normal thyroid tissue to descend from foramen cecum area of the tongue base to lower part of the neck in front of thyroid cartilage [4]. The incidence of lingual thyroid is reported as 1:100,000. It is seven times higher in females [5]. It is more commonly seen during childhood, adolescence and during menopause [4]. Although the pathogenesis of lingual thyroid is unclear, some authors

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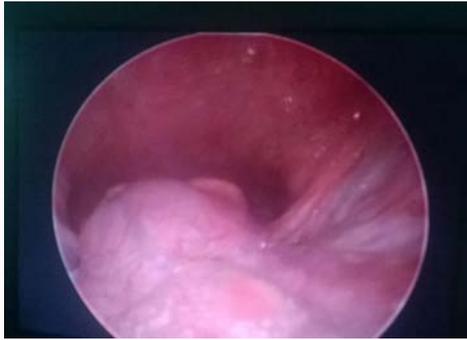
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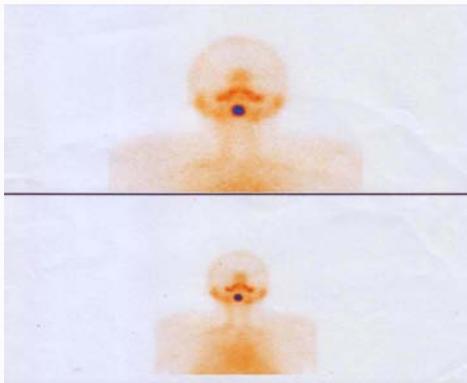
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**Figure 1:** Video laryngoscopic Examination reveals a 3x3cm mass that was covered with normal mucosa in the base of the tongue.



**Figure 2:** Technetium 99m thyroid scan revealed a midline focal area of increased isotope uptake in the lingual region.



**Figure 3:** Excision done through transoral approach.

have postulated that impairment of gland descent during early fetal life maternal anti thyroid immunoglobulins [6]. Ectopic thyroid tissue can also occur between the geniohyoid and mylohyoid muscles (sublingual thyroid), above the hyoid bone (pre-laryngeal thyroid) and in other rare sites such as the mediastinum, precardial sac, heart, breast, pharynx, oesophagus, trachea, lung, duodenum and mesentery of the small intestine, adrenal gland [7]. Although usually asymptomatic, the presence of lingual thyroid can be associated with hypothyroidism. Studies have shown that upto70% of patients with lingual thyroid also have hypothyroidisms. Lingual thyroid may also rarely be associated with symptoms such as dyspnoea, dysphagia and sensation of lump in the throat. Less common complaints include dysphonia or bleeding [8]. Lingual thyroid presents as a midline, nodular mass at the base of the tongue. On videolaryngoscopy



**Figure 4:** Gross appearance of excised specimen.



**Figure 5:** Postoperative day 5 video laryngoscopy.

examination lingual thyroid appears as a smooth surface mucosal lesion with vascularity. An essential part of examination is palpation of the neck to check the presence or absence of thyroid gland in normal position. Investigations for the diagnosis and treatment plan for lingual thyroid include Radionuclide Technetium-99m and Iodine-131 thyroid scans in addition to serum thyroid profile (T3, T4 and TSH) [9]. Technetium scanning confirms the presence of ectopic thyroid tissue at the base of tongue. Our case did not reveal any normal thyroid gland on scintigraphic and radiological examinations. Histologically; on FNAC, lingual thyroid resembles normal thyroid tissue. The treatment options that are available for lingual thyroid include chemotherapy, surgery and radioiodine ablation. Although controversial, clinical treatment may be attempted, using suppressive therapy with exogenous thyroid hormone in small oligosymptomatic lingual thyroids [10,11]. Ablative radioiodine therapy is an alternative approach recommended in older patients or patients who are deemed unfit for surgery [12]. Surgical excision can be carried out only after confirmation of adequate thyroid tissue in the neck by Iodine-131 radio nucleotide scan [4]. The transoral approach offers the best approach among different types of surgical access and provides good exposure, better postoperative recovery and is less traumatic for the patient [13].

**Conclusion**

Lingual thyroid is a rare developmental anomaly, the treatment of which is still controversial in view of the rarity of the condition. It should be included in the differential diagnosis of midline masses of base of the tongue especially in children and adolescents. A recommendation before and after surgery is to check thyroid function test due to the risk of post-operative hypothyroidism. Treatment could be conservative with substitutive hormone treatment in patients with mild symptoms, while surgery is recommended in cases with airway obstruction.

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