



Lingual Thyroid - The Only Thyroid Tissue in the Body: A Case Report

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Abstract

Lingual thyroid is a developmental defect in the descent of thyroid tissue from foramen caecum into the neck. The thyroid normally descends after first month of conception into the neck. Ectopic thyroid is located at base of tongue in 90% cases¹. Early diagnosis and management is essential because it can be only functioning thyroid tissue in the body in 70% cases⁴. We report a case of 28 year old female patient presented with chief complaint of change of voice, foreign body sensation and swelling in posterior part of tongue. Ultrasonography done also confirmed the absence of normal thyroid tissue and thyroid function test suggestive of hypothyroidism. Diagnosis of lingual thyroid was made.

Keywords: Lingual, Thyroid, Ectopic.

Introduction

Lingual thyroid is ectopic thyroid tissue at foramen caecum due to defective embryogenesis during descent of thyroid gland¹. Incidence of ectopic thyroid is one in one lakh¹. It is more common in female 7:1³. It can present at any age but peak incidence is in 3rd decade of life. Lingual thyroid most commonly seen in female during puberty, pregnancy, menopause when plasma TSH increase in body leading to hypertrophy of ectopic tissue⁸. Prevalence rate vary from 1 in 100000 to 1 in 300000². Lingual thyroid is usually asymptomatic can present with change of voice, foreign body sensation, dysphagia, bleeding from mass, sleep apnea, hypothyroidism and difficulty in breathing⁵. Examination usually shows smooth mucosa covered mass over posterior 3rd of tongue and on palpation, usually it is a firm fixed mass at base of tongue.

Fibreoptic laryngoscopy done confirmed presence of swelling in posterior part of tongue. Ultrasound neck was also done to ascertain presence of normal thyroid tissue in the neck. X-ray soft tissue neck done to assess lower extent of mass in neck¹.

Case Report

A twenty eight year old female patient presented in our otorhinolaryngology department with chief complaint of change of voice for 1 month, foreign body sensation and swelling in posterior part of tongue which she noticed one month back along with foreign body sensation in throat. On clinical examination of oral cavity we saw a reddish mucosa covered mass over posterior one third of tongue. (Fig. 1) Fibreoptic laryngoscopy also showed swelling in posterior part of tongue and rest of the larynx was normal. Routine blood investigations

done which were normal. Thyroid function test done which showed a value of Serum TSH 100uIU/ml suggestive of hypothyroidism. Ultrasonography done which revealed absence of thyroid gland in its normal location in the neck. (Fig. 2) The diagnosis of lingual thyroid was made. Since it was only functional thyroid tissue present in body, the patient was put on levothyroxine suppressive therapy and kept under regular follow up. In the first follow up after two months, thyroid function test was repeated which showed TSH45.80 uIU/ml. The second follow up in the 3rd month showed value of TSH 22.67uIU/ml also showed decrease in size of swelling and in symptoms.



Fig 1- showing mass in the posterior 3rd of the tongue



Fig 2- showing the ultrasound of neck with no thyroid in its normal position

Discussion

Lingual thyroid is rare anomaly caused by failure of developing thyroid tissue to migrate from area of foramen caecum to its normal location in neck². Any functioning thyroid tissue found outside normal thyroid location is known as ectopic thyroid. Ectopic thyroid tissue can be present anywhere along the path of descent of thyroid during its

development. Most common location of ectopic thyroid tissue is base of tongue. Incidence of lingual thyroid is 1 in 100000¹. It is very important to understand embryological development of thyroid to know pathophysiology of lingual thyroid. Thyroid gland appear as proliferation of endodermal tissue in floor of pharynx between tuberculum impar and hypobranchial eminence (area which later on forms foramen caecum². Normally thyroid gland descent to its final position in neck that is in front of neck and lateral to 2nd - 4th tracheal ring by 7 week of gestation¹. During descent thyroid tissue retain its communication with foramen caecum through thyroglossal duct which later on obliterate or degenerate. Persistence of thyroglossal duct is known as thyroglossal duct cyst. Other sites of ectopic thyroid is mediastinum, oesophagus and diaphragm⁶.

Exact cause of ectopic thyroid is not known but some postulates that it is because of increase in maternal anti thyroid immunoglobulins. Hickmann reported first case of lingual thyroid in 1869. Monogomery said diagnosis of lingual thyroid made only after demonstration of thyroid follicle in tissue of sampled lesion².

Lingual thyroid can present as change of voice, dysphagia, oropharyngeal obstruction, dyspnoea, fullness in throat and sleep apnoea. 33% Percent patient present as hypothyroidism and bleeding can be there very rarely². Stridor is most common in neonate¹. In infants and children failure to thrive mental retardation and severe respiratory distress require emergency treatment. At puberty and condition like pregnancy, menopause, infection and trauma slowly progressive dysphagia and oropharyngeal obstruction can occur because of hypermetabolic state^{6,7}. On examination we find midline nodular mass in base of tongue which is usually smooth. Palpation of neck done to look for normal thyroid. Other test include thyroid function test which usually shows increase TSH and decrease T3 and T4. Technetium scan to confirm uptake at base of tongue by ectopic thyroid tissue Technetium shows false positive in salivary gland and nasal mucosa physiologically and pathological condition

include meningioma, dacrocystitis, sinusitis and dental disease¹. Ultrasonography neck done to look for normal thyroid gland and X-ray soft tissue neck to look for lower extent of swelling⁸. Histologically lingual thyroid shows normal thyroid parenchyma. Differential diagnosis include vascular tumour Telangiectatic granuloma, teratoma and benign and malignant process of tongue^{9,10}.

Management depends upon presentation and growth behaviour of lingual thyroid. Unless there is no emergency patient treated by conservative treatment that is suppressive therapy with levothyroxine in order to decrease size of thyroid gland⁸. Surgery is planned only in case of oropharyngeal obstruction followed by levothyroxine, as in 70% of cases lingual thyroid only functioning thyroid tissue. Different approaches for surgical excision of lingual thyroid include transcervical route by means of lateral pharyngotomy or trans hyoidpharyngotomy as well as transoral excision with carbon dioxide laser another approach transoral robotic surgery and radioiodine ablation done in old and unfit patients¹. In our case we kept patient on levothyroxine suppressive therapy for 5 to 6 months size of swelling decrease with time and she is on regular follow up till now.

References

1. Kumar LKS, Kurien NM, Jacob MM, Menon PV. Lingual Thyroid. *Ann. Maxillofac Surg.* 2015;5(1):104-107.
2. Amr B, Monib S. Lingual Thyroid a case report. *Int JSurg Case Rep* 2011;2(8):313-315.
3. Prasad KC, Bhat V. Surgical management of lingual thyroid: A report of four cases. *J Oral Maxillofac Surg.* 2000;58:223-7.
4. Thomas G, Hoilat R, Daniels JS, Kalagie W. Ectopic lingual thyroid: A case report. *Int J Oral Maxillofac Surg.* 2003;32:219-21.
5. Gallo A, Leonetti F, Torri E, Manciocco V, Simonelli M, DeVincentiis M. Ectopic lingual thyroid as unusual cause of severe dysphagia. *Dysphagia.* 2001;16:220-3.
6. Klubo -Gwiezdzinska J, Manes RP, Chia SH, Burman KD, Stathatos NA, Deeb ZE, et al. Clinical review: Ectopic cervical thyroid carcinoma – Review of the literature with illustrative case series. *J Clin Endocrinol Metab.* 2011;96:2684-91.
7. Hafidh MA, Sheahan P, Khan NA, Colreavy M, Timon C. Role of CO2 laser in the management of obstructive ectopic lingual thyroids. *J Laryngol Otol.* 2004;118:807-9.
8. Rashid M, Majeed S, Tariq KM, Inam-ul-Haq, Niwaz A, Saeed A. Lingual thyroid as a cause of snoring and sleep apnea. *J Coll Physicians Surg Pak.* 2004;14:681-2.
9. Koch CA, Picken C, Clement SC, Azumi N, Sarlis NJ. Ectopic lingual thyroid: An otolaryngologic emergency beyond childhood. *Thyroid.* 2000;10:511-4.
10. Anand SS, Sood V, Kumar PG, Suryanayna KM, Kotwal N. Case report – Lingual thyroid. *Med J Armed Forces India.* 2006;62: