

Lingual Thyroid: A Case Report

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ABSTRACT

Lingual thyroid is a rare developmental anomaly caused due to the aberrant embryogenesis during descent of the thyroid gland from the foramen cecum to its pre-laryngeal site. Foreign body sensation in throat, dysphagia, dysphonia, pain and bleeding are the common presenting symptoms of this condition. Treatment includes the use of exogenous thyroid hormone to correct the hypothyroidism and to induce the shrinkage of the gland. Other treatment options include surgery and radiotherapy when symptoms of obstruction, bleeding and malignant transformation are present. Presented here is the case of a 39-year-old male presenting with foreign body sensation in throat of one week's duration. The patient was diagnosed with lingual thyroid. Treatment with 50 µg/day of L-thyroxine was advised and surgery was deferred as the patient was asymptomatic.

Keywords: Lingual thyroid, ectopic thyroid, technetium-99m thyroid scan, L-thyroxine

Lingual thyroid is a rare developmental anomaly caused due to the aberrant embryogenesis during descent of the thyroid gland to the neck. The first case of lingual thyroid was reported in 1869 by Hickman. Most frequent ectopic location (about 90%) of the thyroid gland is in the base of the tongue. Other sites include sublingual, thyroglossal and laryngotracheal, mediastinal and esophageal. Prevalence rate ranges from 1 in 1,00,000 to 1 in 3,00,000 population; 0.3% of cases will present in hypothyroid state. Diagnosis is mainly by clinical suspicion and confirmation by imaging.

CASE REPORT

A 39-year-old male presented with foreign body sensation in throat of one week's duration. There was no history of dysphagia, nocturnal dyspnea and sleep apnea/dysphonia. There were no signs of thyroid dysfunction. On intraoral examination, a globular lesion popped up near the mid-line of base of tongue on gagging (Fig. 1). On videolaryngoscopy examination, a globular swelling measuring about 2.5 cm in diameter,

smooth surfaced, extending from dorsal surface of base of tongue to lingual surface of epiglottis was noted. On palpation, the swelling was hard in consistency without any pain or discomfort. No bleeding points were seen. Ear, nose and neck examination was normal. Provisional diagnosis of lingual thyroid was made based on its location and appearance. The patient was advised for following investigations:

- Thyroid function test results showed the following parameters:
 - Triiodothyronine (T3) - 1.22 ng/mL, thyroxine (T4) - 6.24 ng/mL and thyroid-stimulating hormone (TSH) - 14.29 mIU/mL



Figure 1. Intraoral examination.

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- T3 and T4 were measured by competitive electrochemiluminescent immunoassay
- TSH by sandwich electrochemiluminescent immunoassay.
- Ultrasonography of neck showed absent thyroid gland in thyroid fossa. Heterogeneous echo pattern solid lesion in the base of the tongue on the right side suggested lingual thyroid.
- Radionuclide thyroid scan and uptake study using 3 mCi of technetium-99m pertechnetate was done, which revealed abnormal radiotracer concentration in the base of tongue consistent with ectopic thyroid tissue. Thyroid gland was not visualized in its normal position. Thus, it indicated that this lingual thyroid is the only functioning thyroid gland.

The patient was advised 50 µg/day of L-thyroxine and surgery was deferred as the patient was asymptomatic.

DISCUSSION

Lingual thyroid is the presence of ectopic thyroid tissue anywhere between circumvallate papillae of the tongue to epiglottis along the primitive thyroglossal duct. This is due to the embryonic failure of descent of normal thyroid tissue from foramen cecum area of base of tongue to the lower part of the neck in front of the thyroid cartilage. It has been hypothesized that the cause for the arrest in descent of thyroid anlage is due to the maternal antibodies against thyroid antigen.

The incidence of lingual thyroid is reported as 1 in 1,00,000. It is seven times higher in females when compared to males. About 33-62% of all patients have hypothyroidism with elevated levels of TSH.

Foreign body sensation in throat, dysphagia, dysphonia, pain and bleeding are the common presenting symptoms of this condition.

Investigation for lingual thyroid includes serum thyroid profile, radionuclide technetium-99m and iodine-131 thyroid scans. Other investigations include computed tomography (CT) and magnetic resonance imaging (MRI) of the neck with contrast, which helps in planning treatment. In our case, same radionuclide technetium-99m scan was done and abnormal radiotracer concentration in the base of the tongue was noted, consistent with ectopic thyroid tissue. Thyroid gland was not visualized in its normal position.

The treatment options that are available for lingual thyroid include surgery, radioiodine ablation and chemotherapy. The choice of treatment depends on symptoms such as dysphagia, sleep apnea, bleeding from the lesion, location and extent of the lesion.

Treatment of an asymptomatic patient in euthyroid state is regular follow-up. In hypothyroid patients, L-thyroxine is supplemented for suppressing the TSH levels as well as to reduce the size of the lesion. Indications for surgery include severe obstructive symptoms and complications such as bleeding, cystic degeneration or malignancy. Surgical excision may be considered after confirmation of adequate thyroid tissue in the neck by radioisotope scan. Surgical excision can be done either transorally or externally through a transhyoidal pharyngotomy. In patients lacking thyroid tissue in the neck, the lingual thyroid can be excised and implanted in the muscles of the neck.

In the present case, the patient was kept on hormone replacement therapy with L-thyroxine and was followed-up regularly every 3 months. Surgical excision was not considered in the present case as it was the only functioning thyroid gland. However, surgical excision can be considered in future, if malignant transformation occurs.

CONCLUSION

When a mass is observed in the base of tongue, ectopic lingual thyroid must be kept in mind for differential diagnosis. The diagnosis can be confirmed using ultrasonography, radionuclide thyroid scan, CT and MRI scans. Treatment option is based on symptomatology.

SUGGESTED READING

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FDA Permits Marketing of First Diagnostic Test to Aid in Detecting Prosthetic Joint Infections

The US FDA permitted marketing of a Lateral Flow Test Kit as an aid for the detection of periprosthetic joint infection (infection around a joint replacement) in the synovial fluid of patients being evaluated for revision surgery.

Prior to the authorization, there were no FDA-authorized diagnostic tests specifically designed to help health care professionals determine whether the inflammation around a prosthetic joint was due to an infection or another cause, said Tim Stenzel, MD, PhD, Director of the Office of In Vitro Diagnostics and Radiological Health in the FDA's Center for Devices and Radiological Health. (*FDA*)

Weight-training may Help Reduce Hot Flashes

Postmenopausal women can fight off hot flashes and night sweats through weight-training, suggested a new clinical trial published in the journal *Maturitas*.

"Resistance training is already recommended for all women always, but now we can see it may be effective also for hot flashes around menopause," said Dr Emilia Berin of Linkoping University in Sweden, who led the study.

Midlife Type 2 Diabetes Tied to Cerebrovascular Disease

Type 2 diabetes was tied to a higher risk for cerebrovascular disease (CBD) later in life, according to a twin study. In a cohort of over 33,000 individual twins, midlife type 2 diabetes was associated with 29% higher odds of cerebral infarction later in life compared with people without diabetes (odds ratio [OR] 1.29, 95% confidence interval [CI] 1.03-1.61), reported Rongrong Yang, PhD candidate, Tianjin Medical University in China, and colleagues. Having type 2 diabetes in midlife was also tied to over two fold higher odds of experiencing cerebral artery occlusion (OR 2.03, 95% CI 1.20-3.44), the group reported in *Diabetologia*.

German Court Sentences Serial-killing Nurse to Life

A former nurse was convicted of killing 85 of his patients and sentenced to life imprisonment for the worst killing spree in Germany's post-war history, multiple local media outlets reported.

Niels Hoegel, who injected his patients with lethal drugs and then played the hero by appearing to struggle to revive them, had already been convicted and sentenced for two murders in 2015. Prosecutors last year brought further charges over the dozens of other murders of which he was accused. (*Reuters*)