

# Hemoptysis Due to the Lingual Thyroid Bleeding<sup>¶</sup>

## LİNGUAL TİROİD KANAMASINA BAĞLI HEMOPTİZİ

Canan SEZER\*, Atilla PELİT\*, K. Murat ÖZCAN\*\*, Salih TOPCU\*\*\*, Müge ÖZCAN\*\*

\* Dr., Atatürk Göğüs Hastalıkları Hastanesi Göğüs Hastalıkları Kliniği,

\*\* Dr., Ankara Numune Eğitim ve Araştırma Hastanesi KBB Kliniği,

\*\*\*Dr., Atatürk Göğüs Hastalıkları Hastanesi Göğüs Cerrahisi Kliniği, ANKARA

### Summary

**Purpose:** To define lingual thyroid among various etiologies resulting in hemoptysis.

**Case report:** Lingual thyroid is a rare congenital disorder defined as the presence of thyroid tissue in the midline of the base of the tongue between the circumvallate papillae and the epiglottis. It occurs due to defective descent of thyroid tissue through the thyroglossal duct to its normal pretracheal position. We describe a case of lingual thyroid presented with bleeding mimicking hemoptysis.

**Result:** Because of the variability of the conditions causing hemoptysis, a special attention must be given to oropharyngeal examination during the diagnostic workup.

**Key Words:** Lingual thyroid, hemoptysis

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### Özet

**Amaç:** Hemoptiziye neden olan etiyolojiler arasında lingual tiroidin de olabileceğini belirtmek.

**Olgu Sunumu:** Lingual tiroid nadir görülen konjenital bir hastalıktır ve dil kökünde, orta hatta, circumvallat papilla ile epiglot arasında yerleşimli tiroid dokusu varlığı olarak tanımlanır. Tiroid dokusunun tiroglossal duktus boyunca normal pretrakeal pozisyonuna inmesindeki defekte bağlı olarak ortaya çıkar. Burada, kanayarak hemoptiziye neden olan bir lingual tiroid olgusu sunulmuştur.

**Sonuç:** Hemoptizinin nedenleri araştırılırken, lingual tiroid gibi değişik nedenleri olması göz önüne alınarak orofaringeal muayeneye özellikle dikkat edilmelidir.

**Anahtar Kelimeler:** Lingual tiroid, hemoptizi

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Lingual thyroid is a rare developmental anomaly. Thyroid ectopy results from the defective descent of the thyroid tissue through the thyroglossal duct to its normal pretracheal position. The location of the ectopic thyroid may be lingual, sublingual, submandibular, prelaryngeal, tracheal, esophageal, substernal or in the lateral neck (1).

The pathogenesis of the condition remains unclear, although it has been postulated that maternal antithyroid immunoglobulins may cause arrest of gland descent and predispose to poor gland function later in life (2). Kansal et al. have hypothesized that stresses such as puberty, atopic dermatitis and epilepsy might be predisposing factors in hypertrophy (3).

Most of the patients with lingual thyroid are asymptomatic and the development of symptoms is related directly to the size of the mass (4). When symptomatic, patients usually complain of a foreign body sensation in the throat, a cough getting worse in supine position, dysphagia, bleeding, and

intermittent respiratory obstruction (3,5). In this report, we present a patient with lingual thyroid mimicking hemoptysis.

### Case Report

A 57 year-old woman was hospitalized owing to bloody sputum. She complained of bleeding from her mouth while coughing, 3-4 cc per day for 5 days.

On physical examination, her general condition was good. Her vital signs were as follows: Temperature 36,6 °C, pulse 72 beats/min, respiratory rate 18/min, blood pressure 120/80 mmHg. Her chest examination was normal. Her oropharyngeal examination revealed a mass of 3x3x4 cm at the base of the tongue posterior to the circumvallate line. The mass was painless, smooth and pinkish red. There was neither stridor nor hoarseness. No palpable thyroid tissue was present in her neck. Cardiac, abdominal examinations and extremities were normal.

**Figure 1.** CT demonstrating the lingual thyroid tissue at the tongue base.

Chest X-ray, thorax computed tomography (CT), bronchoscopic findings (hypopharynx, larynx, trachea, bronchi) were all normal. The CT scan of the neck revealed a diffusely contrasted, 3 cm heterogenous hypodense mass at the right posterolateral aspect of the root of the tongue (Figure 1).

Technetium 99m scanning of the same region revealed heterogeneous hypodense diffuse uptake of the contrast. There was no uptake in the neck, in location of the thyroid gland (Figure 2).

Laboratory evaluation revealed that elevated serum TSH and low-normal serum thyroxine levels (TSH: 5,42 mIU/ml; normal values: 0,27-4,2).

The patient was administered thyroxine suppression therapy with 0,1 mg Levothyroxine. Bleeding through the mouth has stopped since then.

### Discussion

Lingual thyroid is a mass of ectopic thyroid tissue located at the root of the tongue, in the midline. Ectopic thyroid tissue is encountered 3 to 4 times more often in females (5). Our patient was a female.

The clinical manifestations of benign ectopic thyroid tissue can come about at a mean age of 40,5 years and there are two peaks at 12,5 and 50 years (3). Our patient was 57 years old. Majority of lingual thyroids are asymptomatic. When sympto-

**Figure 2.** Tc 99m thyroid scintigraphy demonstrating increased radioactivity at the base of the tongue. No radioactivity is observed in the normal position of the thyroid gland.

matic, patients usually complain of a foreign body sensation in the throat, a cough getting worse in supine position, dysphagia, bleeding, and intermittent respiratory obstruction (6). The symptoms due to hypothyroidism are evident in 20% of the patients (7). Thyrotoxicosis due to an adenoma in lingual thyroid is also reported (8). Our patient complained of bleeding from mouth while coughing. It is reported that engorged superficial veins could bleed with minimal trauma, which was demonstrated on digital subtraction angiography (3).

Hemoptysis may be due to inflammatory, neoplastic or other causes. Bronchitis, bronchiectasis, tuberculosis, lung abscess, pneumonia are among the inflammatory causes while lung carcinoma and bronchial adenoma are neoplastic reasons. Pulmonary thromboembolism, left ventricular failure, mitral stenosis, trauma, primary pulmonary hypertension and hemorrhagic diatheses are other causes. Bleeding from lingual thyroid may mimic hemoptysis (9). Our patient was hospitalized due to bleeding from her mouth while coughing, in order to investigate the etiology for hemoptysis. The lingual thyroid was diagnosed during the investigation for the causes of the hemoptysis.

History and physical examination are very important in the differential diagnosis of hemoptysis (9). A careful oropharyngeal examination must be performed. In case of a lingual thyroid, a midline mass at the base of the tongue can frequently be

seen without using a mirror. The surface of the mass is generally smooth but it can sometimes be lobulated and ulcerated. It's color varies from blue to bright red (1). This was the case in our patient and a smooth, pinkish red mass could be seen without a mirror on her oropharyngeal examination.

Bronchoscopic examination is the most important method in patients with hemoptysis. Hypopharynx, larynx, trachea and bronchi must be carefully examined. We performed a bronchoscopy and did not demonstrate any pathology in the mentioned regions in our patient.

Ectopic lingual thyroid tissue can be demonstrated on CT scanning. Normal thyroid tissue gives the appearance of enhancement without a contrast injection. Diagnosis is basically scintigraphic (1). The thyroid gland is missing in its normal position in 70% of the patients. Thyroid scintigraphy is obligatory to confirm the diagnosis as well as to demonstrate thyroid tissue in its normal location or in other regions (10). The lingual thyroid was demonstrated in our patient, however, there was no other thyroid tissue in the neck or in other parts of the body.

Circulating thyroid hormones are usually insufficient to cover the metabolic needs of the body, and the ectopic thyroid tissue hypertrophies due to an increase in circulating levels of thyroid stimulating hormone (TSH) (11).

Histologic confirmation is usually not necessary unless iodine or CT scanning is negative or malignancy is suspected. Malignant transformation is rare and occurs in only 1% of the cases (12).

Treatment of lingual thyroid depends on its size, the symptoms, and complicating factors such as ulceration, hemorrhage, or malignancy. Recommended treatment is life long thyroxine suppression, even in asymptomatic patients and who have initially small lingual thyroid, as this treatment will prevent its subsequent enlargement, diminish the risk of malignancy and prevent the onset of hypothyroidism (3). Thyroxine replacement is useful

to reduce symptoms such as dysphagia, bleeding, (airway) obstruction and local irritation (13). Our patient had elevated serum TSH and low-normal serum thyroxine levels. She responded well to thyroid hormone treatment and ectopic thyroid tissue regressed. Bleeding was not seen after that time.

Surgical intervention is necessary for selected patients who become symptomatic or have worsening of their initial symptoms while on suppression therapy. Surgery becomes crucial under conditions such as severe or repeated hemorrhage, gland enlargement with dysphagia that prevents adequate oral intake, and significant airway compromise or dysphonia (2). In planning surgery, it must be kept in mind that the lingual thyroid can be the only functioning thyroid tissue in the body (10).

Radioactive iodine 131 thyroid ablation has been used as an alternative to surgical excision of a symptomatic gland (2).

In conclusion, we report a case of lingual thyroid with bleeding that mimics hemoptysis. Because of the variability of the conditions causing hemoptysis, a special attention must be given to oropharyngeal examination during the diagnostic workup.

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**Yazışma Adresi:** Dr. K. Murat ÖZCAN  
Numune Eğitim ve Araştırma Hastanesi  
KBB Kliniği, ANKARA  
kursatmuratozcan@yahoo.com

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