Lingual Thyroid—Conservative Management or Surgery? A Case Report

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Abstract A Lingual thyroid is relatively rare. Of all ectopic thyroids 90 % are found to be Lingual thyroids. We report a case of 32 year old female who presented to us with history of mass on back of the tongue with history of dysphagia. The clinical, biochemical and radioisotope scanning confirms the diagnosis of lingual thyroid with hypothyroidism. Patient was treated with levothyroxine. After treatment, Lingual thyroid reduced in size and patient improved symptomatically.

Keywords Lingual thyroid · Levothyroxine

Introduction

Lingual thyroid is a rare anomaly with a incidence of 1 in 3000 of the thyroid cases seen with overall prevalence of 1 in 100,000. Lingual thyroid represents most common location of functioning ectopic thyroid tissue. Other sites are cervical lymph nodes, submandibular glands, and trachea. Lingual thyroid is four times common in females than in males [1]. Lingual thyroid tissue is associated with an absence of the normal cervical thyroid in 70 % of cases [2]. The diagnosis of lingual thyroid is usually made clinically, and radionuclide scanning is used to confirm the diagnosis. The objective of this article is to report a rare case of lingual thyroid, its presentation, diagnosis, and management.

Case Report

A 32-year-old woman presented with the complaints of a mass on the back of the tongue and dysphagia of 4-month duration. Clinical examination revealed a midline mass in the posterior part of the tongue (Fig. 1). She was diagnosed clinically as lingual thyroid and further evaluated. Thyroid function test and radioisotope scan were performed. Thyroid function test showed elevated TSH 6.5 IU/ml (reference value 0.30–5.5 IU/ml) and borderline low free thyroxine 0.50 ng/dl (reference value 0.70–1.80 ng/dl), and free triiodothyronine 1.2 pg/ml (reference value 1.7–4.2 pg/ml). A radionuclide scan was carried out using 99 m technetium pertechnetate which showed presence of thyroid tissues in the lingual region with absence of thyroid tissues in the neck (Fig. 2). She was diagnosed as a case of lingual thyroid with hypothyroidism and placed on levothyroxine 100 ug OD. During the follow-up, the patient showed significant improvement in symptom and shrinkage of the lingual thyroid.

Discussion

Lingual thyroid is a mass of ectopic thyroid tissue, located at the base of the tongue, caused by a developmental anomaly of the descent of thyroid gland [3]. The thyroid gland develops as an endodermal diverticulum between the first and second pharyngeal pouches. At the 7th week of gestation, the thyroid gland is an endodermal pouch in the foramen cecum, which is the remnant of thyroglossal tract. Normally thyroid gland descends along a path from foramen cecum in the tongue to the final position in front of trachea. The failure of migration of thyroid tissue along the path from ventral floor of the pharynx to its normal location and

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Fig. 1 Photograph showing Lingual thyroid

sequestration within the tongue substance leads to the development of lingual thyroid.

Most patients are asymptomatic. The mass may enlarge and cause dysphagia, dyspnea, or sensation of choking. Up to 70 % of patients with lingual thyroid have hypothyroidism and 10 % suffer from cretinism. Initial evaluation includes a thorough head and neck examination.

Palpation and ultrasound scanning of the neck are performed to check for the presence of thyroid tissue in normal position. Thyroid function tests often demonstrate normal (euthyroid) to underactive (hypothyroid) gland function with normal to decreased levels of thyroxine (T₄) and triiodothyronine (T₃) and raised levels of thyroid-stimulating hormone (TSH). The uptake by thyroid of a low dose of radiolabelled technetium (^{99m}Tc) is diagnostic of lingual thyroid, typically showing radionuclide activity at the tongue base with no activity in the normal position in the neck [3].

Treatment for lingual thyroid includes surgical and non-surgical methods. Surgical treatment includes excision alone or excision with autotransplantation into muscle. Approach

Fig. 2 ^{99m}Tc showing lingual thyroid

for excision is oral, transhyoid, and lateral pharyngotomy. Nonsurgical treatment includes hormonal therapy and radioactive ablation.

Using levothyroxine to suppress TSH is the mainstay of conservative treatment, aiming to correct hypothyroidism and to control gland size and local symptoms [4]. Effective treatment for lingual thyroid is surgical excision, but no treatment should be attempted until radioactive isotope scan has determined that there is adequate thyroid tissue in the neck [4]. Absolute indications for surgery are severe, repeated hemorrhage, dysphagia preventing adequate oral intake, and significant airway compromise. Thyroid ablation with radioactive iodine is an alternative to surgery and is usually reserved for unfit patients or those who refuse surgical intervention.

In patients lacking thyroid tissue in the neck, lingual thyroid can be excised and autotransplanted to the muscles of neck [5]. Kumar et al studied three lingual thyroid cases in a pediatric age group [6], and similarly Maurice et al reported three lingual thyroid cases in women [7]. In both the reports, patients were treated with levothyroxine and there is significant improvement in symptoms and shrinkage of lingual thyroid. Our patient, once diagnosed to have lingual thyroid by clinical and by radioactive isotope scanning, started on hormone replacement therapy. She has been on regular follow-up and has shown decrease in size of swelling and significant improvement in symptoms.

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