DIAGNOSIS AND MANAGEMENT PROTOCOL OF LINGUAL THYROID

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ABSTRACT

Lingual thyroid is one of the commonest manifestations of ectopic thyroid tissue. Ectopic thyroid refers to thyroid tissue present in locations other than the anterior part of neck between second and fourth tracheal rings. Lingual thyroid presents with symptoms of dysphagia and sometimes stridor depending on the size of the swelling.

KEYWORDS

Ectopic Thyroid Tissue, Lingual Thyroid, Dysphagia, Dyspnea.


INTRODUCTION

Lingual thyroid is commonest type of ectopic thyroid tissue accounting for 90% of cases. Other regions of ectopic thyroid tissue are sub-lingual at the level of hyoid bone, submandibular, tracheal, lateral cervical, maxillary, palatine tonsils, esophageal stomach, pancreas and intestines.

CASE REPORT

An 8-yr-old female presented to the department of surgery, Osmania Hospital with the swelling behind the tongue producing difficulty for swallowing. On protrusion of tongue a semi lobular swelling is seen attached to the base of tongue. The swelling is pinkish in colour and solid in consistency on distal examination. Patient is subjected to CT scan of the neck, which shows a soft tissue lobular swelling at the base of the tongue. USN neck showed similar findings. Thyroid profile showed elevated TSH. Technetium scan shows uptake of radioactive material only at the base of the tongue. No uptake was seen in the normal region of the neck indicating lingual thyroid is the only functioning thyroid tissue in the body. Patient is started on Levothyroxine sodium anhydrous BP 50 micrograms/day for a period of 6 months after which the size of lingual thyroid has reduced. The symptoms of difficulty of swallowing were relieved and the patient is continued on thyroid replacement therapy. The case is reported for its rarity and it is for discussion of its management protocol.

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Linguila thyroid is one of the common manifestations of ectopic thyroid tissue. Prevalence varies between 1:100000 to 1:300000 and its clinical incidence range from 1:4000 to 1:100000. True incidence of the same is probably underestimated. In literature approximately 400 cases of symptomatic patients have been reported. Ectopic thyroid tissue also found in genioghyoid, mylohyoid (Sublingual thyroid), above hyoid bone (Pre-laryngeal thyroid) rarely mediastinum of pericardial sac, heart, breast, pharynx, esophagus, trachea, lung, duodenum, mesentry of small intestine and adrenal gland. Dual ectopic thyroid is described even with thyroid gland in a normal location. Thyroid gland is the first endocrine gland to develop during the 24th day of gestation. Gland arises due to proliferation of endodermal epithelial cells on the medial surface of developing pharyngeal gut between first and second pharyngeal pouches. It is present between tubercular in par and copula near foramen caecum. During the process of migration the gland is connected to the floor of pharyngeal gut by thyroglossal duct. Later it descents in front of the hyoid bone and laryngeal cartilage to lie in between 2nd and 5th tracheal rings. The thyroid gland then descends to meet the lateral ultimobranchial bodies; the fusion of these elements leads to the formation of the functional and mature thyroid gland by the third fetal month. The cause for thyroid dysgenesis is due to gene transcription factors TITF-1, Foxe1 and PAX-8. Genetic mutation in these genes is responsible for abnormal descent of thyroid gland. Majority of ectopic thyroid tissue lies in the midline in the thyroglossal duct tract due to arrest of the migration. Ectopic thyroid tissue is the commonest cause of congenital hypothyroidism. Sometimes without ectopic thyroid tissue is present in 70% of people who may develop subclinical hypothyroidism. Malignant transformation of ectopic thyroid tissue is also observed in cases of lingual thyroid more in females at the ratio 3:1. Commonly seen in females 3:1. Lingual thyroid may manifest at any age more commonly around puberty probably due to increased demand for thyroid hormone causing increase in circulating TSH resulting in growth of ectopic thyroid tissue. Symptoms are dysphagia, dysphonia, ulceration bleeding for the mouth. Malignant transformation and hypothyroidism are the common complications. Lingual thyroid will be seen as a pinkish mass behind the tongue and felt as a firm mass. USG neck shows presence or absence of gland in the neck. CT scan will show the presence of lingual thyroid in the neck. Technetium 99 scan reveals the radioactive uptake of thyroid tissue. Absence or presence of uptake of radioactive material in the neck indicates absence or presence of thyroid tissue in the neck.

OTHER APPROACHES TO TREATMENT
Other approaches are transmandibular approach, lateral pharyngotomy approach and suprahyoid approach for large lingual thyroids. In lateral pharyngotomy the incision starts at the midline of submental region curving downwards towards the hyoid bone and extending up to the level of ear lobe. After sub-platysmal dissection the structures identified are carotid bifurcation, lingual artery, superior thyroid artery and hypoglossal nerve. In most of the cases of lingual thyroid, the carotid bifurcation is placed inferiorly at the level of thyroid cartilage and the superior thyroid vessels are small, hypo plastic or absent. The course of the superior thyroid artery is normal if present. But in majority of cases in lingual thyroid is supplied by branches of lingual artery or facial artery which can be ligated or coagulated.

The inferior thyroid artery is either hypo plastic or absent. Lateral pharyngotomy is done above the hyoid bone and inferior to hypoglossal nerve and the mass is visualized through the pharyngotomy opening and dissection is carried out. In transmandibular approach, incision is given at the level of mandible, suprahyoid dissection is carried out by lifting the suprahyoid muscles; the base of the tongue is pulled down and the lingual thyroid is brought out of the swelling and can further be excised.

REFERENCES


