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Reviving an Antiquated Surgical Method: Managing Submucosal Fibrosis-Complicated Lingual Thyroid: A Case Report

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Abstract

Lingual thyroid is a rare developmental anomaly in which ectopic thyroid tissue is located at the base of the tongue. While often asymptomatic, it can cause airway obstruction, dysphagia, and dysphonia. Management becomes particularly complex when associated with oral submucous fibrosis (OSF), which limits surgical access. We report the case of a 45-year-old female with progressive voice change, foreign body sensation, and trismus. Imaging revealed a hyperdense lesion at the tongue base with absence of cervical thyroid tissue. Fine-needle aspiration cytology confirmed ectopic thyroid tissue. Due to severe trismus from OSF, conventional trans-oral approaches were not feasible. The patient underwent labio-mandibular glossotomy with complete excision of the lingual thyroid, followed by lifelong levothyroxine supplementation. This case highlights the clinical challenges in managing lingual thyroid complicated by OSF and demonstrates the relevance of revisiting older surgical techniques when modern minimally invasive approaches are impractical.

Keywords: Lingual Thyroid, Ectopic Thyroid, Oral Submucous Fibrosis, Labiomandibular Glossotomy, Thyroidectomy, Rare Case Report.

Introduction

Lingual thyroid, a rare condition where thyroid tissue is ectopically located in the tongue, poses a diagnostic and therapeutic challenge due to its infrequency. Its prevalence is estimated to be around 1 in 100,000 individuals, predominantly affecting females [1]. The condition often remains asymptomatic but can lead to complications such as dysphagia, dysphonia, and airway obstruction, necessitating timely intervention. There is a dearth of information in the literature regarding the ideal therapeutic strategy for treating ectopic thyroid, particularly when oral submucous fibrosis complicates matters.

Case Description

A 45-year-old female patient presented with complaints of voice change, foreign body sensation in the throat, and difficulty opening her mouth for a year. The patient produced no history suggestive of hyperthyroidism or hypothyroidism. The history of betel nut chewing has been reported for the past 2 years. The patient exhibited a classical “hot potato voice,” and a swelling was noted in the posterior one-third of the tongue. Grade 2 trismus was also present.

The investigation concluded subclinical hypothyroidism. The CT head identified a hyperdense lesion at the base of the tongue with multiple nodules and ectopic nests of thyroid tissue with calcification. There is no visible cervical thyroid on the ultrasound neck and CT neck.

With video laryngoscopy, a smooth-surfaced swelling was seen in the middle of the back third of the tongue, pressing on the epiglottis. This was later identified as thyroid follicular epithelial cells mixed with a few mature squamous cells in FNAC. The diagnosis was lingual thyroid with submucosal fibrosis and subclinical hypothyroidism. We did labiomandibular glossotomy and lingual thyroid removal. The patient received Ryle's tube feeding and was released with lifelong levothyroxine treatment.

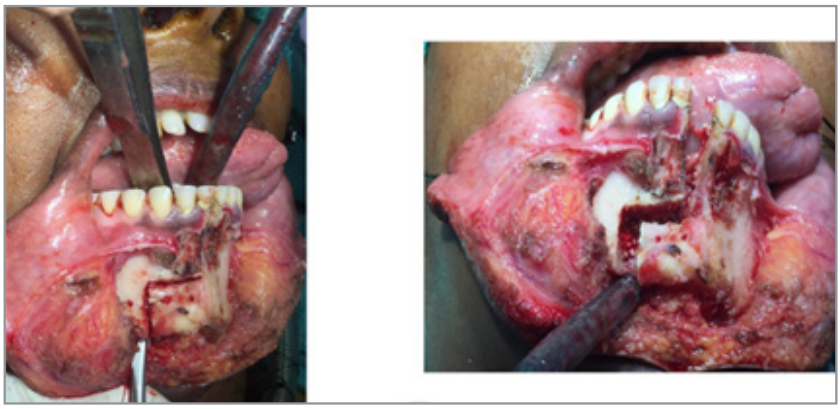

Figure 1: Intraoperative view following a midline lip-splitting incision, showing exposure to the anterior mandible. A step-ladder pattern mandibulotomy is being performed to provide surgical access to the oral cavity and oropharyngeal region.

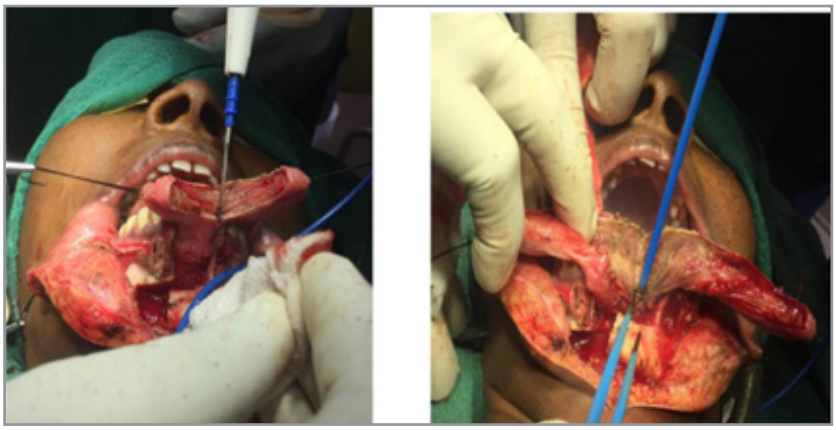

Figure 2: Midline tongue split performed to facilitate exposure. Intraoperative images show precise dissection along the midline raphe with adequate retraction for visualization of deeper structures.

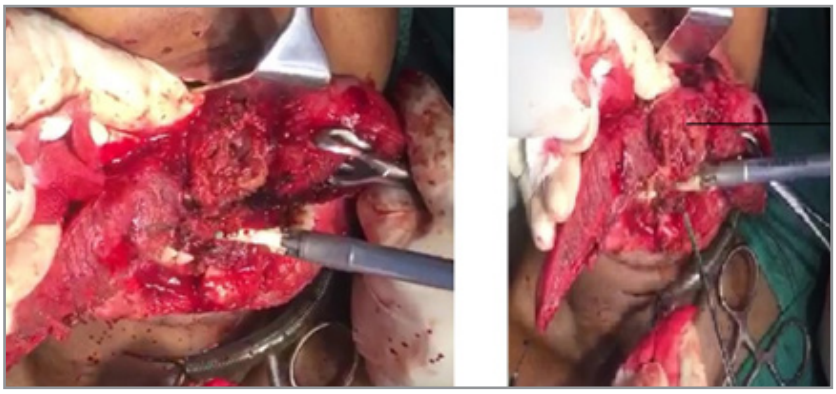

Figure 3: Approach to the lingual thyroid. (A) Exposure of the ectopic thyroid tissue located at the posterior third of the tongue. (B) Excision of the lingual thyroid to achieve hemostasis and complete removal.

Figure 4: Intraoperative view during excision of the lingual thyroid mass, demonstrating adequate exposure and meticulous dissection to separate the lesion from surrounding tongue musculature.

Figure 5: Primary closure of the midline tongue incision following excision of lingual thyroid.

Figure 6: Excised specimen showing encapsulated ectopic thyroid tissue with smooth outer surface.

Figure 7: Fixation of the mandible with titanium mini-plates and screws following completion of the intraoral procedure, ensuring anatomical alignment and stability of the osteotomized segments.

Discussion

In general, the therapeutic approach entails the administration of thyroid hormone therapy to impede the proliferation of the lingual thyroid and reduce its dimensions. Surgical excision is only recommended in exceptional circumstances. At our facility, we were unable to use more sophisticated methods like trans-oral robotic surgery because the patient's OSF prevented her from opening her mouth. As a result, we had to rely on the traditional method of labio-mandibular glossotomy. Despite the progress made in surgical techniques, the continued reliance on conventional approaches underscores the importance of customizing treatments to accommodate the unique situation of each patient.

References

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