

## CASE REPORT



## Primary NOS carcinoma arising in a lingual ectopic thyroid: diagnostic strategy and multidisciplinary management

DANIELA VRÎNCEANU<sup>1)</sup>, DANA-MIHAELA TILICI<sup>2)</sup>, MIHAI DUMITRU<sup>1)</sup>, CLAUDIA-ALEXANDRA NACEA<sup>2)</sup>, ANA MARIA ARNĂUTU<sup>2)</sup>, BEATRICE MIHAELA GRECU<sup>2)</sup>, CARMEN AURELIA MOGOANTĂ<sup>3)</sup>, ANDREEA NICOLETA MARINESCU<sup>4)</sup>, OANA MARIA PĂTRAȘCU<sup>5)</sup>, DIANA LORETA PĂUN<sup>2)</sup>

<sup>1)</sup>Department of ENT, Bucharest University Emergency Hospital, Bucharest, Romania

<sup>2)</sup>Department of Endocrinology, Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

<sup>3)</sup>Department of ENT, University of Medicine and Pharmacy of Craiova, Romania

<sup>4)</sup>Department of Radiology, Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

<sup>5)</sup>Department of Pathology, Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

### Abstract

While ectopic thyroid is an uncommon congenital condition, the occurrence of malignant transformation within ectopic lingual thyroid tissue is exceptionally atypical. We report a rare case of not otherwise specified (NOS) thyroid carcinoma (TC) arising in a sublingual ectopic thyroid in a 54-year-old male. The patient presented with progressive dysphonia, dysphagia, and upper airway obstruction, accompanied by severe hypothyroidism. Imaging studies, including ultrasonography, thyroid scintigraphy with technetium-99m pertechnetate, and cross-sectional computed tomography (CT), confirmed the absence of orthotopic thyroid tissue, identifying a highly vascularized sublingual tumor. Preoperative selective arterial embolization was performed to minimize intraoperative bleeding, followed by a successful surgical excision of the described mass. Histopathological analysis revealed NOS carcinoma arising in ectopic lingual thyroid tissue. The patient was subsequently maintained on suppressive Levothyroxine therapy and referred for radioiodine treatment. This case highlights the importance of a multidisciplinary diagnostic and therapeutic approach in the treatment of ectopic lingual TC. To our knowledge this is one of the few cases of NOS TC arising in a lingual thyroid gland.

**Keywords:** carcinoma, ectopic, lingual, NOS, thyroid.

### Introduction

Ectopic thyroid represents a rare congenital anomaly resulting from an abnormal embryological migration of thyroid tissue from the foramen cecum to its typical pretracheal position. The estimated prevalence of ectopic thyroid tissue is approximately one in 100 000 to 300 000 individuals within the general population, with a higher occurrence observed in women compared to men [1, 2]. It can occur at any age, although most cases are diagnosed during the neonatal period through newborn screening. However, in some instances, the presentation may be delayed until the fourth or sixth decade of life, as ectopic thyroid tissue may undergo pathological changes and become symptomatic later on [3]. The lingual thyroid accounts for approximately 90% of ectopic cases, with subsequent occurrences observed in sublingual, hyoid, and lateral cervical sites [4].

About 47% of ectopic thyroids are asymptomatic. However, the rest can manifest like trouble swallowing, voice changes, unclear speech, or blockage in the upper airway. These issues depend on the size and location of the ectopic tissue [5]. Clinical hypothyroidism is reported in more than 70% of cases, while hyperthyroidism is an uncommon association [3]. In less than 1% of ectopic thyroid cases, malignant transformation can occur, most often in the form of papillary thyroid carcinoma (PTC) [6]. Diagnosis

of ectopic thyroid involves multiple imaging studies – neck ultrasound (US), thyroid scintigraphy, and cross-sectional imaging-like computed tomography (CT), magnetic resonance imaging (MRI), or single-photon emission computed tomography (SPECT) – to confirm the absence of normally located thyroid tissue. Fine-needle aspiration cytology (FNAC) may aid in differentiating benign from malignant lesions. Still, how easy it is to reach the area in the body may limit its use.

The management of ectopic thyroid depends on the patient's symptoms, hormonal profile, and presence of malignancy. Surgical resection of ectopic thyroid is recommended in case of bleeding or ulceration of the gland, uncontrolled hyperthyroidism, and severe dyspnea, often followed by radioactive iodine (RAI) therapy and lifelong Levothyroxine (LT4) replacement [2]. Preoperative selective arterial embolization may be considered in highly vascularized lesions to minimize intraoperative bleeding [7, 8].

### Case presentation

We present a case report about a 54-year-old male patient with a history of smoking, admitted to the Emergency Room for hematemesis. He admits that a similar episode had occurred 15 years earlier.

From the anamnesis, it appears that the patient had a thyroid disorder in childhood, unspecified in type, for

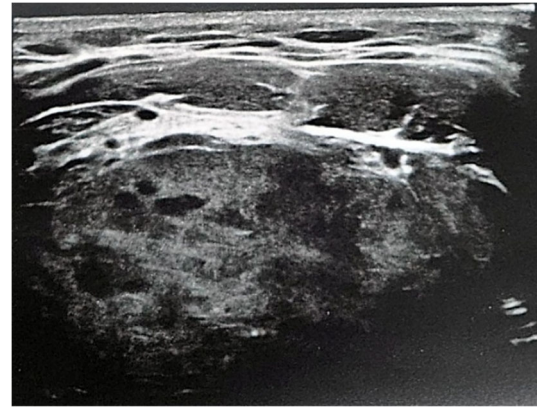
which he cannot provide details, and no medical records are available. He also reported progressive dysphonia and dysphagia over the past several years.

Clinical assessment pathologically revealed an underweight patient with a body mass index (BMI) of 19 kg/m<sup>2</sup>, presenting with tachycardia (125 beats/min), severe dysphonia associated with tongue-base edema, and diffuse abdominal tenderness.

Laboratory tests revealed severe hypochromic anemia, leukocytosis with neutrophilia, thrombocytosis, hyperkalemia associated with hyponatremia, and thyroid function tests consistent with severe hypothyroidism with thyroid-stimulating hormone (TSH) above 48  $\mu$ IU/mL.

The patient was initially admitted to the Department of Gastroenterology for management of gastrointestinal (GI) bleeding. Upper GI endoscopy identified a duodenal bulb ulcer, Forrest IIc, as the source of bleeding. Additionally, it revealed a protruding mass at the base of the tongue, superior to the epiglottis, with multiple dilated and tortuous vascular structures.

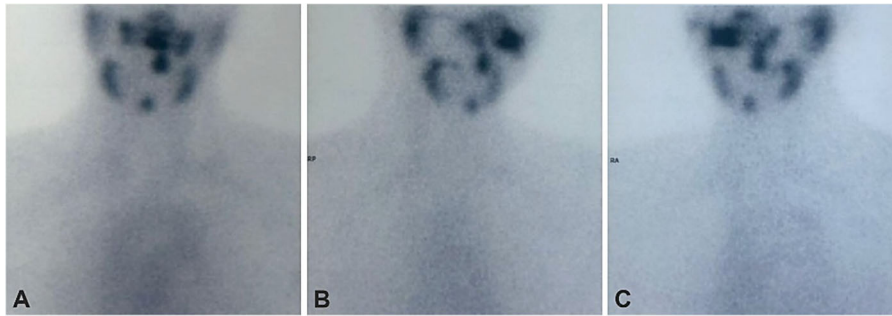
In the context of abnormal thyroid function tests, an endocrinology consultation was requested. Cervical US performed at that time demonstrated the absence of thyroid tissue in the thyroid bed and identified, in the submandibular region, a heterogeneous hypoechoic sublingual mass (43×20 mm) with features suggestive of ectopic thyroid tissue (Figure 1).



**Figure 1** – Neck grayscale sonography visualizing the muscles of the mouth floor, the mass effect on the tongue muscles and the presence of an ill-defined mass occupying the tongue base.

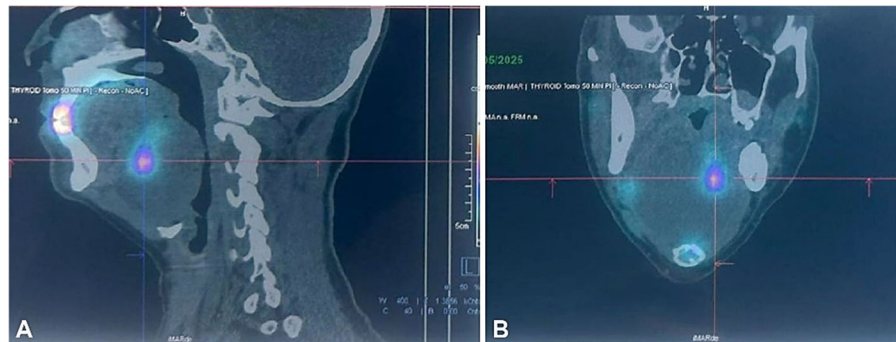
Consequently, beyond the initiation of LT4 therapy, thyroid scintigraphy was also recommended. LT4 therapy was initiated at 50  $\mu$ g/day, subsequently increased gradually to 100  $\mu$ g/day after several days.

Thyroid scintigraphy with technetium-99m (<sup>99m</sup>Tc) pertechnetate and SPECT–CT acquisition demonstrated the absence of the thyroid gland in its normal anatomical position and confirmed a lingual ectopic thyroid with leftward displacement (Figure 2, A–C; Figure 3, A and B).



**Figure 2** – (A–C) Images of thyroid scintigraphy demonstrate the ectopic uptake of the tracer at the level of the oral cavity.

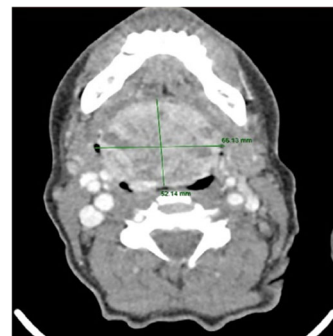
**Figure 3** – (A and B) SPECT–CT indicates a portion of metabolic active tissue inside the ectopic lingual thyroid mass raising the suspicion of a possible neoplasia process. CT: computed tomography; SPECT: Single-photon emission computed tomography.



Also, CT further confirmed the presence of a lingual expansile mass (52×60×66 mm), extending into the oropharynx and hypopharynx with significant luminal narrowing (Figure 4).

Flexible fiberoptic exploration of the tongue base revealed a reddish mass obstructing the direct view of the laryngeal framework and with a tendency to easy bleeding of endoscopic palpation (Figure 5).

Following stabilization and resolution of the GI hemorrhage, the patient was referred to the Ear, Nose and Throat (ENT) Department for surgical resection of the sublingual mass. The intervention was performed two months after the initial diagnosis, at a time when the thyroid function profile had normalized under LT4 therapy.



**Figure 4** – Coronal neck CT scan used for measuring the lingual thyroid mass and to pre plan the surgical resection.

Before the surgical excision of the ectopic thyroid, the patient underwent a preoperative endovascular intervention. Under angio-CT guidance, selective arterial embolization of the vascular supply to the sublingual mass was performed to reduce its volume, minimizing intraoperative bleeding risk and thereby facilitating a safer and more accessible surgical approach (Figure 6).

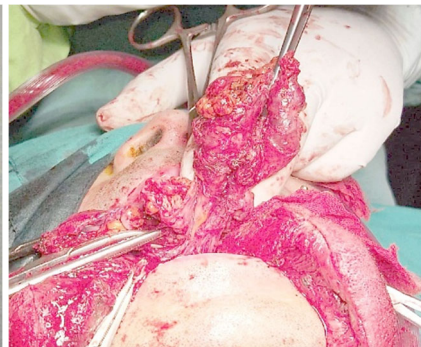
The patient underwent surgical removal of the lingual



**Figure 5 – Endoscopic view of the lingual thyroid, in the case of surgery the intubation would have been difficult and with increased risk of bleeding.**



**Figure 6 – Angiography image, this procedure enabled direct visualization of the modified vascularization of the thyroid gland and selective embolization before surgery.**



**Figure 7 – Surgical aspect of the lingual thyroidectomy.**

On histopathological examination, an infiltrative proliferation of cells with debatable nuclear features of PTC, namely nuclear grooves and a clearing of nuclear chromatin was observed. Also, a second population of cells with tachychromatic and irregularity of the nuclei was identified. A variety of architectural patterns, mostly with solid and pseudo-follicular arrangements of the cells was recognized. Also, invasion in the musculo-connective tissues, as well as aspect of lympho-vascular invasion were visible. At the periphery of the lesion, rare follicles with normal morphological aspects of thyroid gland were distinguished (Figure 8).

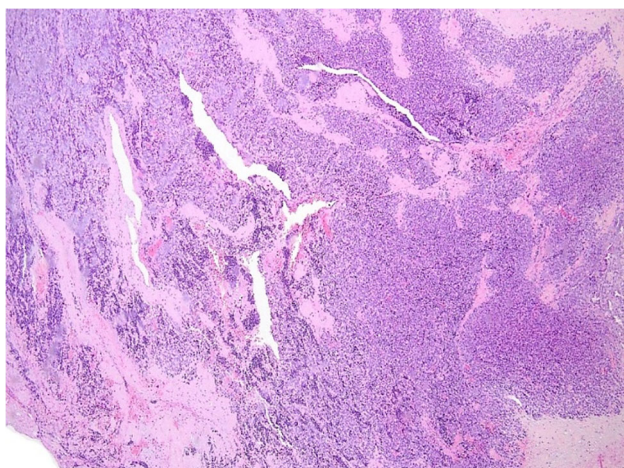
No clear aspects of papillary structures, nor psammoma bodies were spotted. The cells presented mild pleomorphism, with discrete overlapping of the nuclei, some clearing of the chromatin with no atypical mitotic activity and no aspects of comedonecrosis (Figure 9).

Immunohistochemical (IHC) tests revealed that the

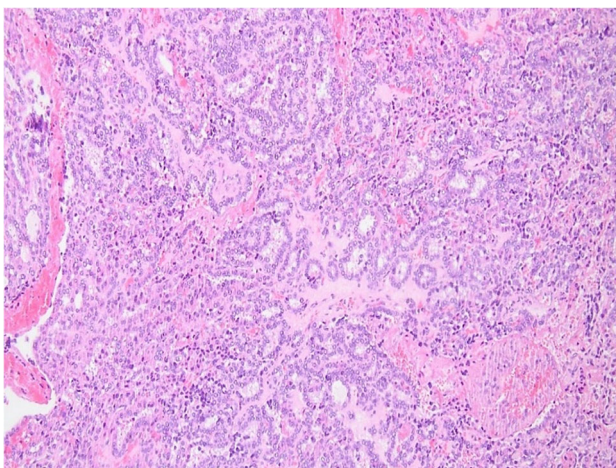
thyroid in the Department of ENT, Bucharest University Emergency Hospital, Bucharest, Romania. The first step of the surgery was tracheostomy in order to secure the airway. The mass was dissected through a translingual approach with radical thyroidectomy and closure of the tongue base. In spite of the embolization the bleeding amounted to 500 mL and the patient received intraoperative blood transfusion (Figure 7).

majority of the cells were of thyroïdal origin, with paired box 8 (PAX8) and thyroid transcription factor-1 (TTF-1) nuclear positivity, and with thyroglobulin (Tg) dot-like positivity in the cytoplasm (Figures 10 and 11). Calcitonin, spalt-like transcription factor 4 (SALL4), octamer-binding transcription factor 4 (OCT4) and SRY (sex determining region Y)-box transcription factor 2 (SOX2) were negative.

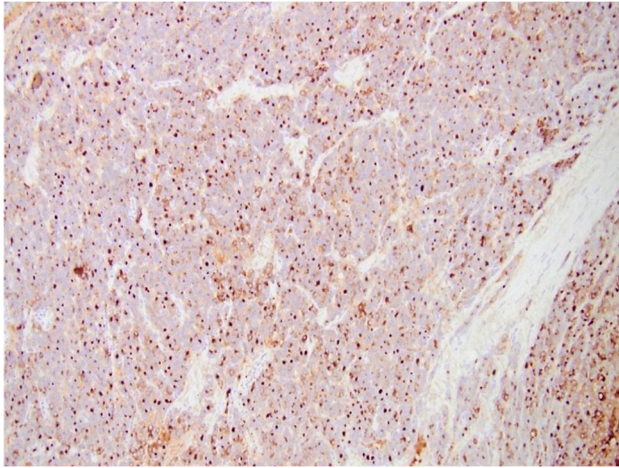
The diagnosis was first signed out as solid PTC developed on a lingual thyroid, with recommended second opinion. Three independent pathologists analyzed the slides, with no clear consensus of a specific diagnostic, but with the certitude that the aspects were consisted with so-called “carcinoma, most probably not otherwise specified (NOS), unclassified” because of the cyto-architectural features and the ectopic location. The most reliable criteria for the diagnosis of carcinoma were the invasion of the vessels, as well as the infiltrative pattern.



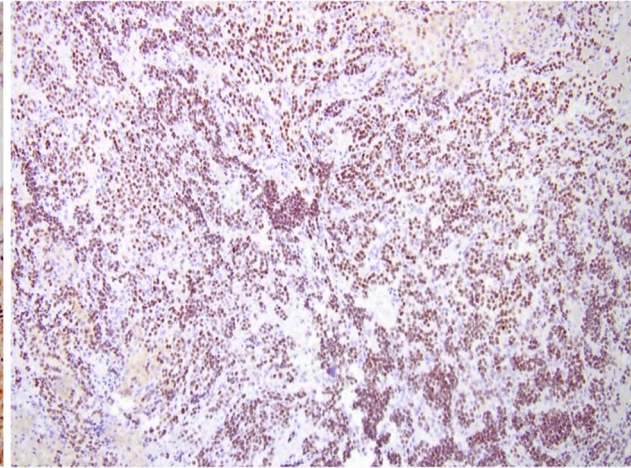
**Figure 8 – Cellular proliferation with solid architecture with infiltrative character (invasion into the connective tissue is observed); cells are arranged in islands, with solid and trabecular pattern. HE staining, 40×. HE: Hematoxylin–Eosin.**



**Figure 9 – Cribriform proliferation composed of discrete pleomorphic cells, overlapping, with nuclei that sometimes present a clarified appearance, “orphan Annie”-like, others with tachychromatic nuclei. HE staining, 100×.**



**Figure 10** – Cytoplasmic IHC positivity for the Tg immunomarker (100×). IHC: Immunohistochemical; Tg: Thyroglobulin.



**Figure 11** – TTF-1 nuclear positivity in tumor cells (100×). TTF-1: Thyroid transcription factor-1.

At discharge the patient removed the tracheostomy without any further incident.

The patient remains on LT4 therapy in suppressive doses. He is directed to the nuclear medicine department to establish the need for further RAI treatment.

## ☒ Discussions

Ectopic thyroid tissue results from the arrested migration of the thyroid primordium during embryogenesis. The majority of ectopic glands (approximately 90%) are lingual, presenting as a midline mass at the base of the tongue [2].

A female predominance is usually reported (a reported female/male ratio of about 3:1), and most patients are hypothyroid because no normal thyroid tissue is present [2].

Ectopic thyroid tissue can undergo the same pathological changes (hyperplasia, inflammation, neoplasia) as a normal thyroid [9]. As the ectopic gland enlarges, patients typically develop dysphagia, dysphonia, or airway obstruction [2].

These masses are often highly vascular; endoscopic images of lingual thyroids show a smooth tongue base tumor with engorged vessels and even bleeding spots [10]. In our patient, scintigraphy was diagnostic: <sup>99m</sup>Tc pertechnetate uptake was seen only in the tongue base mass, and no uptake occurred in the neck, confirming that the sublingual mass was the only present functional thyroid tissue [10].

Malignant transformation of ectopic thyroid is very rare. Over 99% of TCs arise within an orthotopic thyroid gland, and only a small fraction occurs in ectopic locations [6, 11]. For example, one review found only 51 published cases of carcinoma in lingual thyroid tissue between 1910 and 2016 [2]. In all of these cases, PTC was by far the most common histology – this matches our finding of PTC in the sublingual gland [2].

Given the low incidence, there are no screening guidelines, but any enlarging or suspicious ectopic thyroid mass should be evaluated for cancer. In current practice, a solid, infiltrative nodule or cytological atypia in ectopic thyroid tissue needs definitive management. In our patient, the decision for surgery was prompted by the large vascular mass and associated symptoms; histopathology then confirmed a solid-variant papillary carcinoma with focal atypia. This outcome is consistent with the literature emphasis

that papillary-type carcinoma predominates in ectopic thyroid tumors [2].

The diagnostic workup of an ectopic thyroid mass combines imaging and functional studies. US in our patient showed no thyroid gland in the neck and identified a heterogeneous sublingual mass. Sonography is useful for differential diagnosis regarding other possible neck pathology like thyroglossal duct cysts, enlarged lymph nodes, salivary gland tumors, and others [12].

Radionuclide scan (<sup>99m</sup>Tc) was settling it localized tracer uptake to the tongue base and demonstrated absence of uptake in the thyroid bed, thus proving the mass was thyroid tissue [10]. Cross-sectional imaging (CT and SPECT–CT) then defined the lesion's size and extension into the oropharynx/hypopharynx. Laboratory tests revealed severe hypothyroidism, as often occurs when all thyroid tissue is ectopic [2]. We promptly started LT4 replacement; LT4 therapy helps normalize thyroid function and suppress TSH-driven growth of ectopic tissue.

Definitive management in this case required a multidisciplinary approach. Surgery is the cornerstone of treatment for ectopic thyroid tissue [9].

In our case, two months after the diagnosis, once euthyroidism was achieved on LT4, the tumor was removed transorally with minimal intraoperative bleeding. However, because the tumor was very large and hemorrhagic, the ENT team elected preoperative arterial embolization to reduce the blood supply. Arterial embolization in thyroid surgery is not routine, but it is precedent: *e.g.*, embolizing thyroid arteries is used in patients with massive goiters to shrink the gland and decrease operative blood loss. Likewise, embolization of feeding vessels has been applied to vascular tongue base tumors to facilitate safer resection. In our patient, angiography identified the enlarged lingual artery branches feeding the mass, and these were embolized [7, 8].

Given the big dimensions of the lingual thyroid mass securing the airway was one of the main difficulties in the surgical setting. Laryngeal sonography performed firsthand by the ENT surgeon enabled quick tracheostomy under local anesthesia [13].

Ectopic lingual thyroids can present with normofollicular or microfollicular structures composed of benign looking thyroid cells, but without a well-formed fibrous capsule,

thus simulating an invasive carcinoma. The lesion is rare and raises diagnostic problems for pathologists. Carcinoma arising in a lingual thyroid is exceedingly rare with a few cases reported so far, most of which are classified as “differentiated TC”, namely of papillary or follicular origin [14, 15]. Because of the rarity of the lesion, clear histopathological diagnostic criteria of carcinoma are not well defined, but the existing of vascular invasion, as well as a desmoplastic stromal reaction are considered signs of malignancy [16]. The wide variety of aspects and subtypes that are described in TCs, such as follicular pattern of PTC, or solid or poorly differentiated papillary carcinomas are presumably observed also in cases of ectopic TCs [17, 18]. Moreover, we have to bear in mind that an ectopic tissue has different architectural patterns and that can lead to misdiagnosis and unrecognition of malignant pathologies.

Our case is unique not just because of its rarity, but because the cells do not present clear aspects of either follicular or papillary differentiation, and so a definite diagnosis could not be rendered. Because of the aspects of the nuclei, the lesion could not be classified as a classical papillary carcinoma; on the other hand, the absence of atypical mitosis as well as the absence of necrosis represent arguments that the lesion is not of poorly differentiated proliferation. IHC tests were of limited utility, as there is no definite marker for differentiation of various TCs. Nevertheless, the lympho-vascular invasion, the overlapping of the nuclei and the architectural pattern supported the diagnosis of TC. The overall consensus of the pathologies was that this is an unclassified invasive lesion with unknown potential aggressiveness and overall, with an unknown prognosis.

Postoperatively, the patient is treated by standard TC protocols. He remains on high-dose LT4 (150 µg daily) to suppress TSH. Adjuvant RAI therapy was indicated to ablate any remaining thyroid cells. This plan is consistent with expert recommendations that ectopic TCs be managed with individualized risk-based strategies, potentially including removal of any remaining thyroid tissue and RAI when appropriate [19]. Close follow-up will include periodic Tg measurement and imaging, as in any differentiated TC. Furthermore, such complex cases require a trained interdisciplinary team for successful management in a tertiary hospital [20].

## ✉ Conclusions

Primary cancer in an ectopic thyroid gland is extremely rare, but this case illustrates why it must always be considered. Lingual or sublingual thyroid masses, especially in the absence of a normal thyroid, require careful evaluation. Long-term follow-up with Tg monitoring, RAI scanning, and thyroid function assessment is essential to detect recurrence or metastasis early. The literature indicates that papillary carcinoma is the most common malignancy in these cases. This case highlights the need for tailored team-based care in patients with ectopic TC. It also provides key details to the few studies available on this rare disorder. To our knowledge there are around 50 cases of lingual thyroid documented, with fewer than half undergoing biopsy or surgery and fewer than 10 presenting a final pathology result of carcinoma and mostly this is the first case of NOS TC arising in a lingual thyroid.

## Conflict of interests

The authors declare no conflict of interests.

## Author contributions

All authors have read and agreed to the published version of the manuscript.

## Funding

This research received no external funding.

## Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki.

## Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

## Data Availability Statement

All data are available from the corresponding authors upon reasonable request.

## References

- Kim MS, Kong YH, Lee DY. A case of subclinical hypothyroidism with lingual and right pretracheal ectopic thyroid. *J Clin Res Pediatr Endocrinol*, 2015, 7(2):148–150. <https://doi.org/10.4274/jcrpe.1791> PMID: 26316439 PMCID: PMC4563188
- Fakadej T, Balar AB, Kota S, Lakhani DA, Joseph JT. Lingual thyroid: case report and brief review of the literature. *Radiol Case Rep*, 2023, 18(1):312–316. <https://doi.org/10.1016/j.radcr.2022.10.039> PMID: 36388619 PMCID: PMC9664394
- Alanazi SM, Limaïem F. Ectopic thyroid. [Updated 2023 Jan 1]. In: StatPearls [Internet]. StatPearls Publishing, Treasure Island, FL, USA, 2025 Jan-. <https://www.ncbi.nlm.nih.gov/books/NBK539892/>
- Fu G, Guo F, Zhang W, Ruan X, Zheng X, Wang Z, Gao M. Diagnosis and treatment of ectopic thyroid carcinoma: a case report and literature review. *Front Oncol*, 2022, 12:1072607. <https://doi.org/10.3389/fonc.2022.1072607> PMID: 36465404 PMCID: PMC9716014
- Noussios G, Anagnostis P, Goulis DG, Lappas D, Natsis K. Ectopic thyroid tissue: anatomical, clinical, and surgical implications of a rare entity. *Eur J Endocrinol*, 2011, 165(3):375–382. <https://doi.org/10.1530/EJE-11-0461> PMID: 21715415
- Lianos G, Bali C, Tatsis V, Anastasiadi Z, Lianou E, Papanthanasidou V, Messinis T. Ectopic thyroid carcinoma. Case report. *G Chir*, 2013, 34(4):114–116. PMID: 23660162 PMCID: PMC3915575
- Tartaglia F, Salvatori FM, Pichelli D, Sgueglia M, Blasi S, Custereri F. Preoperative embolization of thyroid arteries in a patient with a large cervicomedial hyperfunctioning goiter. *Thyroid*, 2007, 17(8):787–792. <https://doi.org/10.1089/thy.2006.0217> PMID: 17725437
- Tartaglia F, Salvatori FM, Russo G, Blasi S, Sgueglia M, Tromba L, Berni A. Selective embolization of thyroid arteries for pre-resection or palliative treatment of large cervicomedial goiters. *Surg Innov*, 2011, 18(1):70–78. <https://doi.org/10.1177/1553350610387616> PMID: 21059607
- Klubo-Gwiedzinska J, Manes RP, Chia SH, Burman KD, Stathatos NA, Deeb ZE, Wartofsky L. Clinical review: Ectopic cervical thyroid carcinoma – review of the literature with illustrative case series. *J Clin Endocrinol Metab*, 2011, 96(9):2684–2691. <https://doi.org/10.1210/jc.2011-0611> PMID: 21752893
- Koc G, Taskaldiran I, Aslan Felek S, Saltbas MA, Omma T, Akbulut A, Culha C. Ectopic lingual thyroid presenting with massive hematemesis. *Acta Endocrinol (Bucharest)*, 2019, 15(2):244–246. <https://doi.org/10.4183/aeb.2019.244> PMID: 31508184 PMCID: PMC6711637
- Ibrahim M, Attaf R, Alhaj Saleh M, Najjoun H. Lateral neck ectopic papillary thyroid carcinoma: a rare case report. *Int J Surg Case Rep*, 2024, 125:110496. <https://doi.org/10.1016/j.ijscr.2024.110496> PMID: 39454237 PMCID: PMC11542042
- Vrinceanu D, Dumitru M, Cergan R, Anghel AG, Costache A, Patrascu ET, Sarafoleanu CC. Correlations between ultrasonography performed by the ENT specialist and pathologic

- findings in the management of three cases with thyroglossal duct cyst. *Med Ultrason*, 2018, 20(4):524–526. <https://doi.org/10.11152/mu-1422> PMID: 30534662
- [13] Cergan R, Dumitru M, Vrinceanu D, Neagos A, Jeican II, Ciuluvica RC. Ultrasonography of the larynx: novel use during the SARS-CoV-2 pandemic (Review). *Exp Ther Med*, 2021, 21(3): 273. <https://doi.org/10.3892/etm.2021.9704> PMID: 33603880 PMCID: PMC7851652
- [14] Singh SP, Das S, Jain DK. Lingual papillary thyroid carcinoma with bilateral neck node metastasis. *World J Endocr Surg*, 2017, 9(2):68–71. <https://doi.org/10.5005/jp-journals-10002-1214>
- [15] Bhojwani KM, Hegde MC, Alva A, Vishwas KV. Papillary carcinoma in a lingual thyroid: an unusual presentation. *Ear Nose Throat J*, 2012, 91(7):289–291. PMID: 22829035
- [16] Seoane JM, Cameselle-Teijeiro J, Romero MA. Poorly differentiated oxyphilic (Hürthle cell) carcinoma arising in lingual thyroid: a case report and review of the literature. *Endocr Pathol*, 2002, 13(4):353–360. <https://doi.org/10.1385/ep:13:4:353> PMID: 12665653
- [17] Sturniolo G, Violi MA, Galletti B, Baldari S, Campenni A, Vermiglio F, Moleti M. Differentiated thyroid carcinoma in lingual thyroid. *Endocrine*, 2016, 51(1):189–198. <https://doi.org/10.1007/s12020-015-0593-y> PMID: 25987346
- [18] Jalaeefar A, Motiee-Langroudi M, Shirkhoda M, Sharifi A. Papillary thyroid carcinoma with cervical lymph node metastasis arising from lingual thyroid. *Indian J Otolaryngol Head Neck Surg*, 2019, 71(Suppl 1):762–765. <https://doi.org/10.1007/s12070-018-1539-5> PMID: 31742060 PMCID: PMC6848510
- [19] Yoneoka Y, Tange A, Honda K, Ohara N. Lingual thyroid unmasked by acute stroke: a hidden airway emergency. *Cureus*, 2025, 17(12):e99162. <https://doi.org/10.7759/cureus.99162> PMID: 41536379 PMCID: PMC12796546
- [20] Vrinceanu D, Dumitru M, Marinescu A, Serboiu C, Musat G, Radulescu M, Popa-Cherecheanu M, Ciornei C, Manole F. Management of giant thyroid tumors in patients with multiple comorbidities in a tertiary head and neck surgery center. *Biomedicine*, 2024, 12(10):2204. <https://doi.org/10.3390/biomedicine12102204> PMID: 39457517 PMCID: PMC11504648

### **Corresponding authors**

Dana Mihaela Tilici, MD, PhD Student, Department of Endocrinology, Faculty of Medicine, Carol Davila University of Medicine and Pharmacy, 37 Dionisie Lupu Street, Sector 2, 020021 Bucharest, Romania; Phone +40740–427 346, e-mail: dana-mihaela.tilici@drd.umfcd.ro

Mihai Dumitru, Senior Lecturer, MD, MSc, PhD, Department of ENT, Bucharest University Emergency Hospital, 169 Independenței Avenue, Sector 5, 050098 Bucharest, Romania; Phone +40721–752 318, e-mail: orldumitrumihai@yahoo.com

*Received: January 15, 2026*

*Accepted: February 8, 2026*