



# Non-Functioning Ectopic Parathyroid Adenoma Within a Lymph Node Along the Recurrent Laryngeal Nerve Chain: A Case Report and Literature Review

K. Gorgi<sup>1</sup> and M. Chaouche<sup>2</sup>

<sup>1</sup>Department of Endocrinology, CHP TATA, Morocco

<sup>2</sup>Department of Dermatology, CHU Mohammed VI, Agadir, Morocco



## OPEN ACCESS

### \*Correspondence:

Dr. Khaoula Gorgi, Department of Endocrinology, CHP of Tata University Hospital, Rabat, Morocco, Tel: 0615591874;  
E-mail: khaoulagorgi@gmail.com

**Received Date:** 09 Apr 2026

**Accepted Date:** 29 Apr 2026

**Published Date:** 01 May 2026

### Citation:

Gorgi K, Chaouche M. Non-Functioning Ectopic Parathyroid Adenoma Within a Lymph Node Along the Recurrent Laryngeal Nerve Chain: A Case Report and Literature Review. *WebLog J Endocrinol Diabetes*. wjed.2026.e0104. <https://doi.org/10.5281/zenodo.20003902>  
**ISSN 3071-3986**

**Copyright**© 2026 Dr. Khaoula Gorgi. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## Abstract

Ectopic parathyroid adenomas are rare and usually present with biochemical hyperparathyroidism. They most frequently occur in the mediastinum or thymic region. Localization within a lymph node along the recurrent laryngeal nerve chain is extremely rare. We report a case of a 70-year-old woman in whom a non-functioning ectopic parathyroid adenoma was incidentally discovered within a lymph node of the right recurrent laryngeal nerve chain during surgery for a suspicious thyroid nodule. Histopathology and immunohistochemistry confirmed the parathyroid origin. This case highlights an unusual localization and the diagnostic challenges associated with non-functioning parathyroid adenomas.

## Introduction

Parathyroid adenoma is the most common cause of primary hyperparathyroidism in adults. However, up to 10-22 % of parathyroid glands may be ectopic due to abnormal embryologic migration from the third and fourth pharyngeal pouches [1, 2]. The most commonly reported ectopic sites include the thymus, mediastinum, and thyroid gland [3]. In contrast, parathyroid adenomas within a lymph node along the recurrent laryngeal nerve chain are exceptionally rare.

Non-functioning adenomas, defined as lesions without biochemical abnormalities (normal serum calcium and PTH), are even rarer and are usually discovered incidentally on postoperative histopathologic analysis [4, 5].

## Case Presentation

A 70-year-old woman with no significant medical history or clinical signs of hyperparathyroidism underwent right thyroid isthmectomy for a suspicious thyroid nodule.

Preoperative laboratory tests were normal:

- Serum calcium: 96 mg/L (reference: 84-102 mg/L)
- Albumin: 40 g/L (32-46 g/L)
- Phosphate: 35 mg/L (23-47 mg/L)

During surgery, an enlarged lymph node along the right recurrent laryngeal nerve chain was identified and excised.

Histopathology revealed:

- A follicular thyroid adenoma
- A nodular proliferation within the lymph node consistent with parathyroid tissue.

Immunohistochemistry confirmed parathyroid origin (positive PTH staining).

The final diagnosis was a non-functioning ectopic parathyroid adenoma within a lymph node along the recurrent laryngeal nerve chain, discovered incidentally.

## Discussion

1. Embryological basis and ectopic locations

Parathyroid glands develop from the third (inferior glands) and fourth (superior glands) pharyngeal pouches and migrate to their final positions posterior to the thyroid lobes. Abnormal migration can result in ectopic locations [1, 2]. Common ectopic sites include:

- Anterior mediastinum (thymic and retrosternal regions)
- Retropharyngeal or retroesophageal spaces
- Intrathyroidal
- Along major cervical vessels [3, 6, 7]

However, intranodal localization along the recurrent laryngeal nerve chain is exceptionally rare.

#### 2. Non-functioning adenomas

Typical parathyroid adenomas present with hyperparathyroidism and hypercalcemia. Non-functioning adenomas without biochemical abnormalities are rare and usually discovered incidentally on histology [4, 5, 8]. Such lesions may represent:

- Early-stage adenomas prior to significant hormone secretion
- Adenomas with low secretory activity
- Hyperplastic parathyroid tissue without autonomous secretion

#### 3. Diagnostic and clinical implications

The lack of biochemical abnormalities makes preoperative diagnosis difficult. Standard imaging (ultrasound, sestamibi scan) is designed for functioning glands and may miss small or unusual ectopic lesions [5, 9].

Surgically, intranodal ectopic parathyroid tissue can be mistaken for metastatic lymph nodes, especially during thyroid cancer surgery. Misinterpretation may lead to unnecessary surgical extension or incorrect tumor staging. Systematic histopathologic examination is therefore essential.

#### 4. Literature review

Although many ectopic parathyroid adenomas have been reported - including rare sites such as the retropharyngeal space, piriform sinus, and soft palate - no prior case has described an intranodal adenoma along the recurrent laryngeal nerve chain [3, 6, 10, 11]. This anatomical uniqueness makes the present case particularly noteworthy.

## Conclusion

We report an exceptional case of a non-functioning ectopic parathyroid adenoma within a lymph node along the recurrent laryngeal nerve chain, incidentally discovered during surgery for thyroid pathology. This case underscores the variability of parathyroid anatomy and highlights the importance of careful histopathological analysis to avoid misdiagnosis or overtreatment.

## References

1. Georgakopoulos B, Al Khalili Y. Anatomy, Head and Neck, Parathyroid, Ectopic Glands. Stat Pearls. 2026.
2. Ruda JM, Hollenbeak CS, Stack BC Jr. A systematic review of the diagnosis and treatment of primary hyperparathyroidism from 1995 to 2003. *Otolaryngol Head Neck Surg.* 2005; 132(3): 359-372.
3. Connolly MJ, Lazinski D, Aoki KA, McLean L, Torres C, Dos Santos MP. Ectopic Parathyroid Adenoma in Piriform Sinus: Case Report and Review of the Literature. *Ear Nose Throat J.* 2019; 98(1): 14-17.
4. Zerizer I, Parsai A, Win Z, Al Nahhas A. Anatomical and functional localization of ectopic parathyroid adenomas: 6 year institutional experience. *Nucl Med Commun.* 2011; 32(5): 496-502.
5. Batchala PP, Rehm PK. Retropharyngeal ectopic parathyroid adenoma versus lymph node: problem solving with CT neck angiogram. *J Postgrad Med.* 2019; 65(4): 237-240.
6. Johnson NA, Tublin ME, Ogilvie JB. Parathyroid Imaging: Technique and Role in the Preoperative Evaluation of Primary Hyperparathyroidism. *Radiology.* 202.
7. Schulte KM. Inherited primary hyperparathyroidism. *Semin Surg Oncol.* 2000; 18(3): 233-250.
8. Wilhelm SM, Wang TS, Ruan DT, Lee JA, Asa SL, Duh Q, et al. The American Association of Endocrine Surgeons Guidelines for Definitive Management of Primary Hyperparathyroidism. *JAMA Surg.* 2016; 151(10): 959-968.
9. Civelek AC. Difficulties in localizing ectopic parathyroid adenomas. *Eur J Radiol.* 2018; 107: 162-170.
10. Yang J. Rare ectopic parathyroid adenoma at anterior skull base. *Otol Neurotol.* 2025; 46(2): 137-142.
11. Liu Q. Ectopic parathyroid tissue within soft palate: unusual location and review of literature. *Case Rep Otolaryngol.* 2024; 2024: 8895123.