

Ectopic Papillary Thyroid Carcinoma Presenting as Right Lateral Neck Mass: A Case Report

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Abstract

A lateral neck mass can be the initial presentation of a papillary thyroid carcinoma. A 24-year-old female presented with a 2.0 x 2.0 cm, non-erythematous, non-tender, right lateral neck mass. A neck ultrasound showed an enlarged right jugulodigastric (Level II) lymph node and a normal-sized thyroid gland exhibiting mild parenchymal disease with no nodules. Positron emission tomography-computed tomography scan (PET-CT) showed an enlarged intensely fluorodeoxyglucose (FDG)-avid right level III lymph node, which may be primary versus metastatic. Fine-needle aspiration biopsy (FNAB) of the lymph node showed the presence of atypical cells that are highly suspicious for metastatic carcinoma. A cervical lymph node excision biopsy was performed and histopathology showed metastatic papillary thyroid carcinoma. The patient underwent total thyroidectomy with neck dissection. The final histopathologic examination of the thyroid gland revealed chronic lymphocytic thyroiditis with the lymph nodes negative for metastasis. She eventually underwent radioactive iodine ablation (RAI) with a dose of 30mCi. Post-RAI whole-body scan showed functioning thyroid tissue remnants with no distant metastasis. This case adds to the limited data that ectopic thyroid carcinoma can be present in patients who initially present with neck masses.

Key words: thyroid, papillary carcinoma

INTRODUCTION

Lateral neck mass as a manifestation of occult thyroid carcinoma is rare, comprising less than 1% of all thyroid carcinoma cases.¹ Diagnosis rests on the failure to detect a primary tumor within the thyroid gland after a thorough histopathologic examination.² Among the different types of thyroid cancers, papillary carcinoma has the highest rate of occurrence, similar to those found in native thyroid carcinoma. We report a female with a papillary thyroid carcinoma presenting as a lateral neck mass.

CASE

A 24-year-old, asymptomatic Filipino female, consulted due to an incidental finding of a right lateral neck mass. She does not smoke nor does she have previous neck irradiation, thyroid disease or family history of thyroid cancer. On physical examination, there was a non-erythematous, non-tender, firm, movable, 2.0 x 2.0 cm nodule at level II of the right cervical region. Thyroid function tests were normal: TSH was 1.995 uIU/ml (reference range 0.35 – 4.94), FT4 was 0.93 ng/dl (reference range 0.7-1.48), and FT3 was 2.77 pg/ml (reference range 1.71-3.71). A neck ultrasound showed an enlarged right jugulodigastric level II lymph

node and a normal-sized thyroid gland exhibiting mild parenchymal disease with no nodules (Figures 1 to 3).

PET-CT scan revealed an enlarged intensely FDG-avid right level III lymph node measuring 1.7 cm which may be a primary or metastatic lesion. FNAB of the lymph node showed atypical cells highly suspicious for a metastatic carcinoma (Figure 4). Subsequent excision biopsy showed that the lymph node architecture was predominantly effaced with the tumor. The impression was a metastatic papillary thyroid carcinoma (Figures 5 and 6).

The patient underwent total thyroidectomy with selective right neck lymph node dissection (levels III, IV, VI). The postoperative diagnosis was papillary thyroid carcinoma stage I (T0N1MX). Histopathology of the thyroid gland showed chronic lymphocytic thyroiditis with all eight lymph nodes negative for tumor (0/1 level III and 0/7 level VI) (Figure 7). The thyroid gland was submitted in its entirety and blocked for histologic evaluation. The right lobe measured 3.3 x 2.0 x 1.0 cm, the isthmus measured 1.45 x 1.1 x 0.6 cm, and the left lobe measured 4.2 x 2.4 x 2.1 cm. Thyroid tissue sections 0.2 to 0.3 cm thick were prepared with no grossly visible mass noted on inspection. Serial sections 4 microns thick for each block

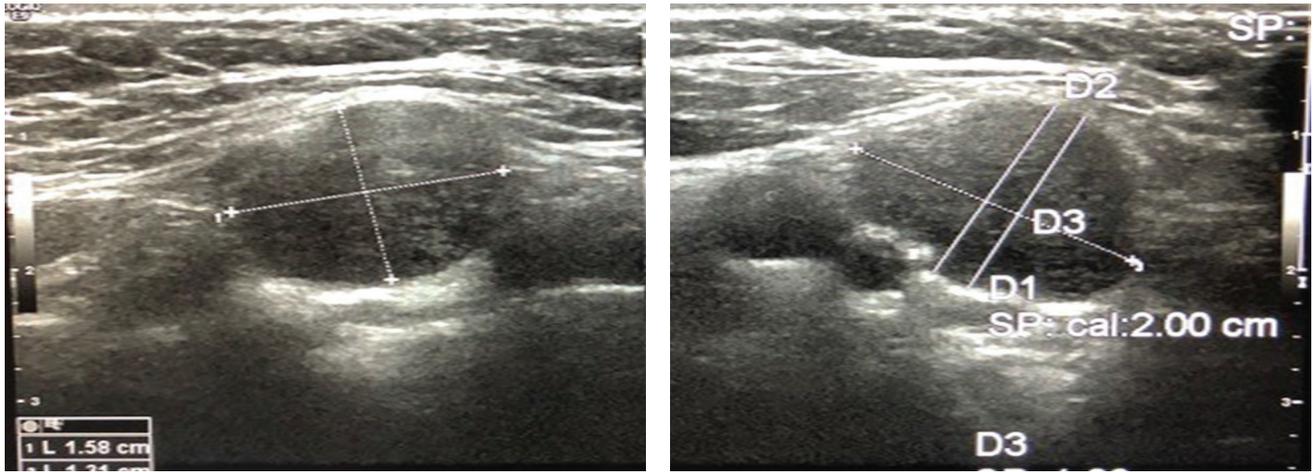


Figure 1. Ultrasound of the neck: 1.8 x 1.3 x 1.6 cm enlarged lymph node in the right superior jugular chain (level II), with x 10 magnification.

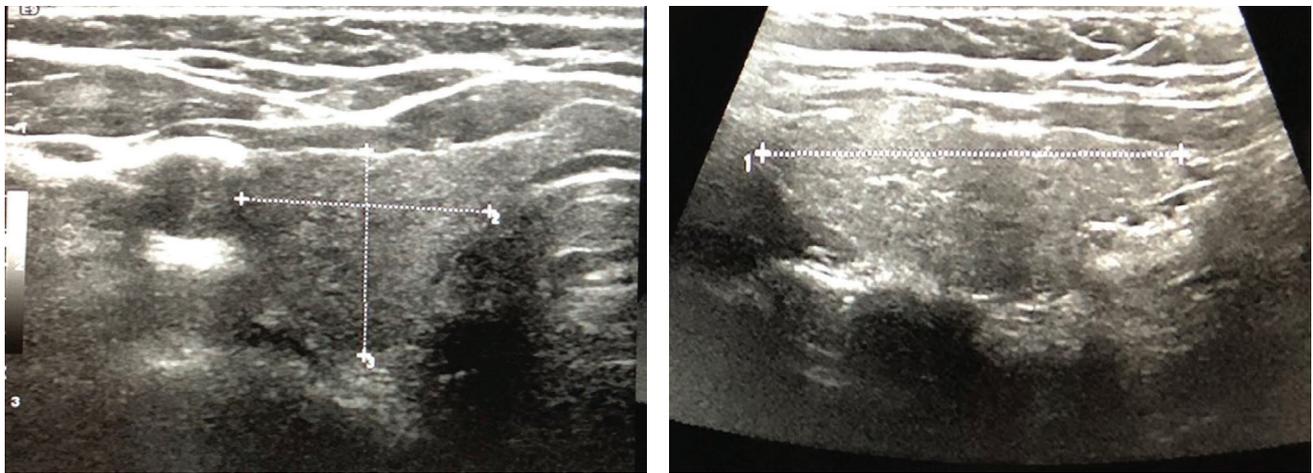


Figure 2. Ultrasound of the right thyroid lobe: The right lobe measured 3.3 x 2.0 x 1.0 cm, with x 10 magnification.

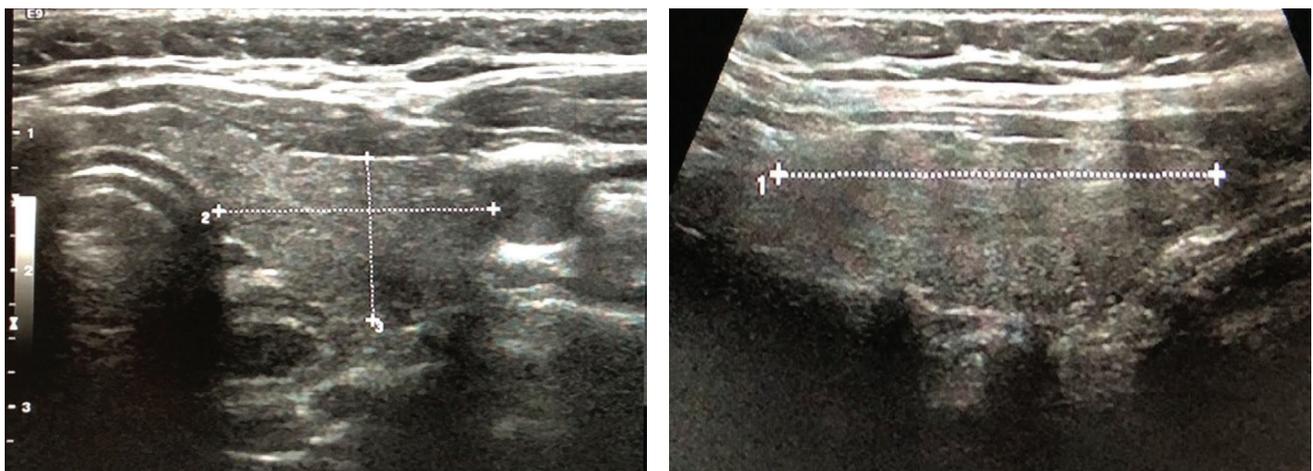


Figure 3. Ultrasound of the left thyroid lobe: The left lobe measured 4.2 x 2.4 x 2.1 cm, with x 10 magnification.

were analyzed; each slide was examined by at least seven different pathologists. Histopathology of the thyroid gland was negative for malignancy. The patient was managed as having papillary thyroid carcinoma from an ectopic thyroid tissue located at the right lateral cervical region.

Postoperatively, the patient underwent radioactive iodine ablation with a dose of 30mCi. Post-ablation whole-body scan showed functioning thyroid remnants with no distant metastasis. She is currently asymptomatic. She is on calcium supplementation and levothyroxine suppression.

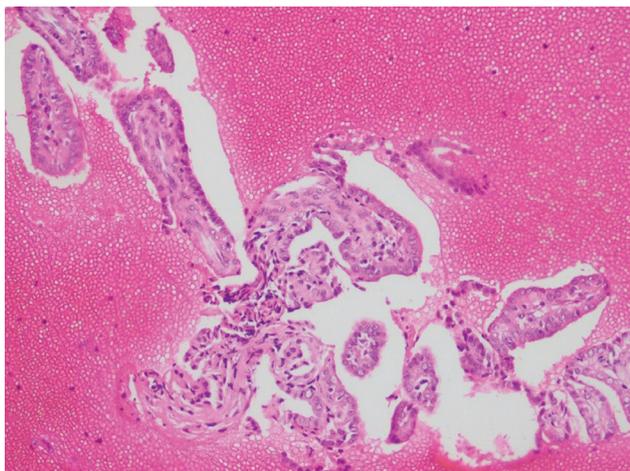


Figure 4. Right cervical lymph node FNAB: Atypical cells present were highly suspicious for a metastatic carcinoma (Papanicolaou Stain, 40x).

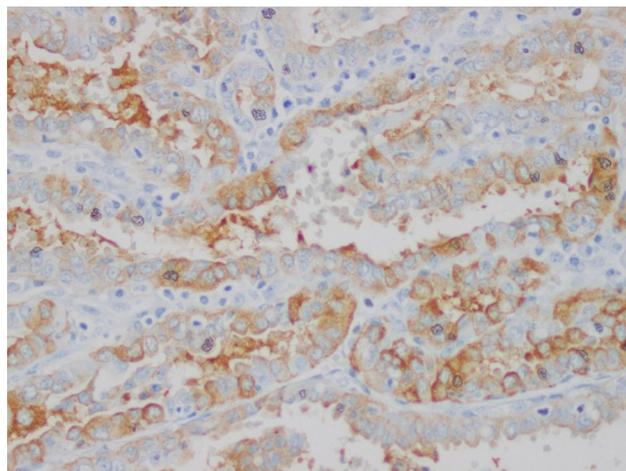


Figure 5. Right cervical lymph node: Immunohistochemistry (Thyroglobulin Immunoperoxidase, 100x).

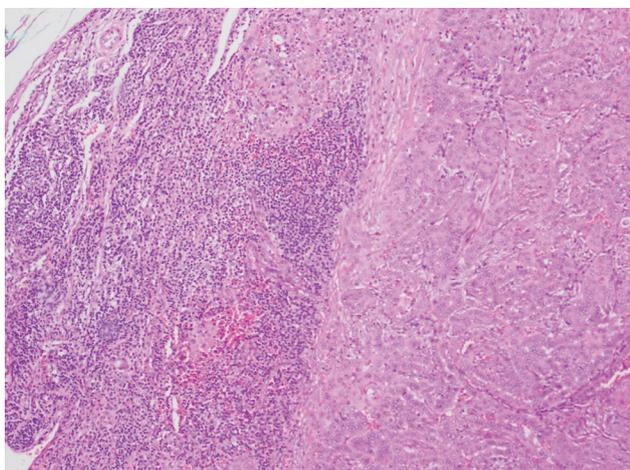


Figure 6. Right cervical lymph node: Papillary Thyroid Carcinoma, Metastatic (H&E, 20x).

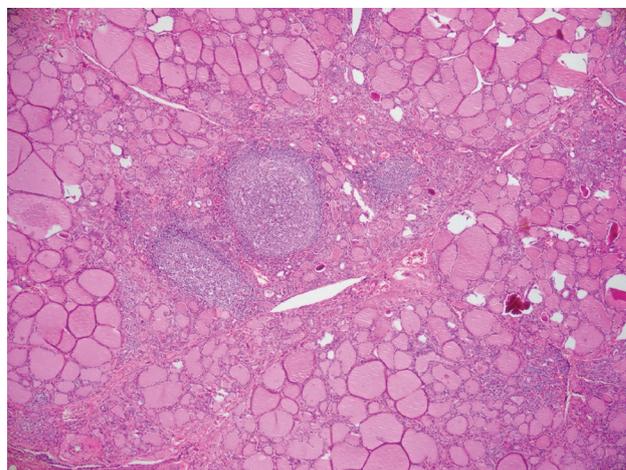


Figure 7. Thyroid gland: Total thyroidectomy showed Chronic Lymphocytic Thyroiditis (H&E, 10x).

Twelve months post-thyroidectomy, serum thyroglobulin level was low at <0.04 ng/ml (reference range 3.5 - 77) while anti-thyroglobulin was elevated at 22.65 IU/ml (reference range <4.11). The plan is for serial monitoring of serum anti-thyroglobulin.

DISCUSSION

The International Agency for Research on Cancer World Health Organization Global Cancer Observatory names thyroid carcinoma as the 7th most common malignancy in the Philippines with an incidence rate of 4.1% in 2020.³ It is more common in those aged 20 to 40 years.⁴ However, the prevalence of ectopic thyroid carcinoma with no histopathologic evidence of malignancy within the orthotopic thyroid has not been determined.

Initial assessment of a patient with a lateral neck mass begins with a complete medical history with an emphasis on any history of malignancy or prior irradiation, followed by a complete physical examination of the head and

neck. Appropriate diagnostic procedures include thyroid function tests and neck ultrasonography. When considering malignancy, FNAB of identified neck masses is the first step in establishing a diagnosis along with appropriate imaging modalities.⁵ In our patient, a PET-CT scan was already done before the referral, and is a useful tool in the imaging of head and neck tumors. Indications for its use include the staging of a primary tumor, treatment planning, monitoring of treatment response and identification of an unknown primary.⁶

Histopathologic examination of the cervical lymph node biopsy revealed a metastatic papillary thyroid carcinoma; however, thyroid gland histopathology was negative for malignancy. This finding is unusual as the majority of ectopic thyroid malignancies also present with corresponding malignancy in the native tissue.

Standard evidence-based guidelines on the optimal treatment of primary ectopic lateral neck thyroid carcinoma have not yet been established. In published

case reports, treatment strategies employed were similar to the one presented above. In the first case reviewed, total thyroidectomy was performed on a 55-year-old male diagnosed with papillary carcinoma in the lateral ectopic thyroid gland masquerading as a submandibular gland tumor.⁷ In another case report, a 63-year-old male presented with a midline neck mass anterior to the thyroid cartilage. FNAB revealed papillary thyroid carcinoma. The patient underwent total thyroidectomy with neck dissection. Histopathology revealed a normal thyroid gland with papillary thyroid carcinoma in the cervical mass. There was no identifiable metastatic involvement.⁸

Physicians should still consider the possibility of thyroid carcinoma arising from ectopic tissue in patients presenting with a lateral neck mass as prompt diagnosis and treatment increase survival.

CONCLUSION

Thyroid carcinoma is not exclusively found in the thyroid gland. Ectopic thyroid carcinoma should be part of the differential diagnoses in patients presenting with neck masses. This case demonstrates that thyroid carcinoma in an ectopic tissue cannot be excluded, even in the presence of a normal thyroid gland. Treatment of these cases must be individualized.

Ethical Consideration

Patient consent was obtained before the submission of the manuscript.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

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