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A Rare Synchronous Occurrence of Papillary Thyroid Carcinoma and Follicular Lymphoma: Case Report and Review of the Literature

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ABSTRACT

We report a rare case of concurrent Papillary Thyroid Carcinoma (PTC) and Follicular Lymphoma (FL) in a 44-year-old female, highlighting the importance of comprehensive evaluation in patients with malignancy to avoid missing a second primary or metastatic disease.

The patient, previously healthy, presented for routine breast cancer screening, during which a BIRADS 4 lesion was detected on MRI. A referral to a breast surgeon led to the incidental discovery of a right thyroid nodule. Ultrasound revealed a 1.9 cm nodule with microcalcifications and a 2.6 cm left supraclavicular lymph node with a distorted hilum. Further imaging (CT and PET-CT) identified hypermetabolic lymphadenopathy in the perigastric, left para-aortic, and peripancreatic regions. FNAC of the thyroid nodule confirmed PTC.

Following multidisciplinary discussion, excision biopsies of the supraclavicular and retroperitoneal lymph nodes were performed. Histopathology confirmed low-grade FL in both sites, supported by immunohistochemistry. Total thyroidectomy confirmed PTC (stage pT1b Nx), and postoperative radioiodine therapy was administered. Genetic analysis revealed no pathogenic mutations. FL was staged as at least Stage III, Grade 1, with no current indication for treatment per NCCN 2024 guidelines. The breast lesion was biopsied and subsequently excised. Histopathology confirmed it to be a benign intraductal papilloma.

Concurrent presentation of PTC and FL is exceedingly rare. Although previous reports have associated such presentations with EZH2 mutations, no such mutation was detected in this case. This report underscores the critical role of vigilant lymph node assessment and histological confirmation in malignancy cases to identify secondary primaries or metastases.

INTRODUCTION

Papillary Thyroid Carcinoma (PTC) is the most common type of thyroid cancer [1], frequently presenting with cervical lymph node metastases [2]. Follicular Lymphoma (FL) is an indolent B-cell non-Hodgkin's lymphoma [3]. Although co-occurrence of PTC with other haematological malignancies has been described [4], the

synchronous presentation of PTC and FL within the same lymph node is exceptionally rare, with only two such cases reported in the literature [5,6].

Here, we describe a rare case of coexisting PTC and FL involving a cervical lymph node, diagnosed during the preoperative workup for thyroidectomy.

CASE PRESENTATION

A 44-year-old woman underwent routine breast cancer screening. Breast ultrasound revealed several hypoechoic lesions in the left breast, graded as BIRADS 4a, indicating mild suspicion for malignancy. She was referred to a breast surgeon, who incidentally detected a right thyroid nodule during physical examination.

Neck ultrasound revealed a solid, hypoechoic, oval-shaped nodule in the right thyroid lobe measuring 1.9 × 1.2 cm, with microcalcifications classified as TIRADS 4 (moderately suspicious for malignancy) (Figure 1). A 2.6 × 1.1 cm left supraclavicular lymph node was also noted, appearing iso- to mildly hypoechoic with a distorted central fatty hilum and no calcifications (Figure 2).

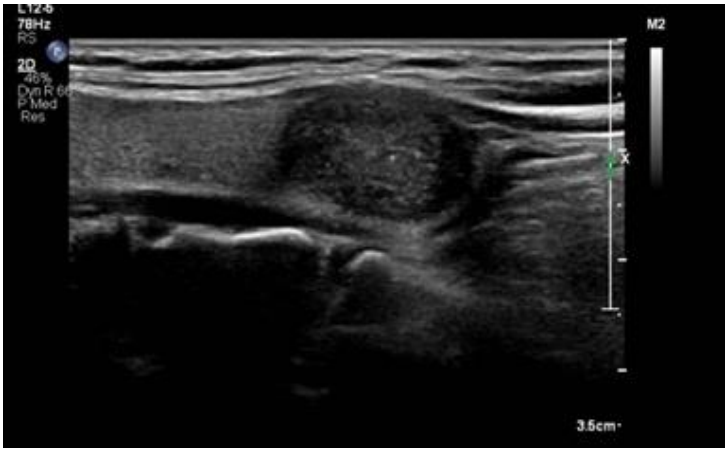

Figure 1: Ultrasound - Hypoechoic right lobe thyroid nodule with microcalcifications.

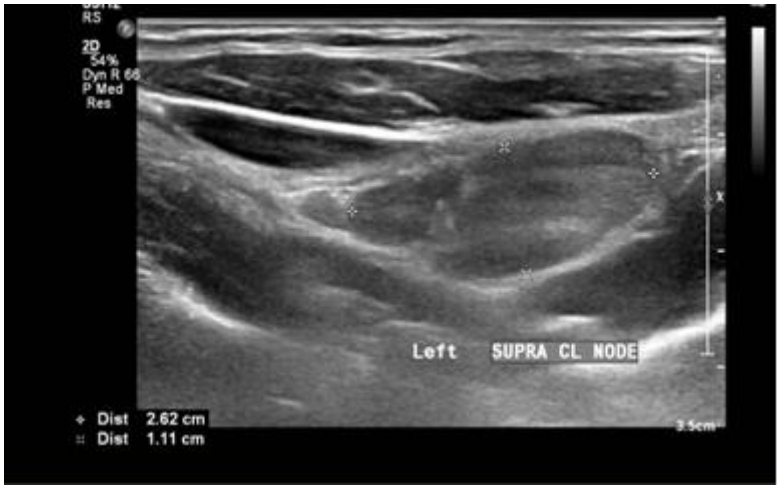

Figure 2: Ultrasound - Left Supraclavicular Lymph node with distorted hilum

Further imaging with abdominal CT identified multiple enlarged, hypodense, homogeneously enhancing lymph nodes in the perigastric, left para-aortic, aortocaval, and peripancreatic regions. PET-CT showed a hypermetabolic right thyroid nodule and multiple hypermetabolic lymph nodes.

Ultrasound-guided Fine-Needle Aspiration (FNA) of the thyroid nodule confirmed features consistent with papillary thyroid carcinoma (Figure 3). Excision biopsies were performed for the left supraclavicular lymph node and a retroperitoneal lymph node (via laparoscopy). Histopathology of both nodes revealed low-grade follicular lymphoma, confirmed by immunohistochemistry (Figure 4).

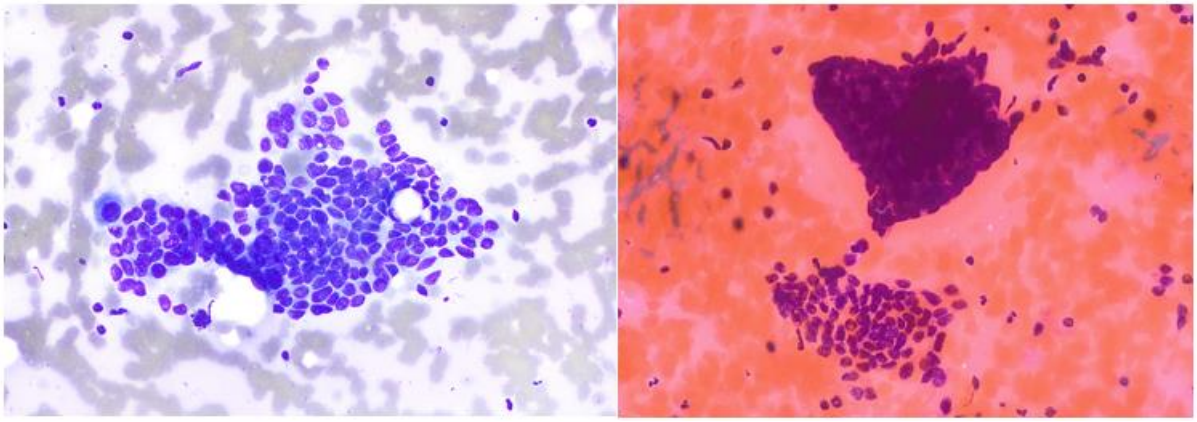

Figure 3: Thyroid FNAC: Papillary Thyroid Carcinoma- Giemsa and Pap stains. Cells in Papillaroid arrangement with vesicular chromatin, grooves and pseudoinclusions.

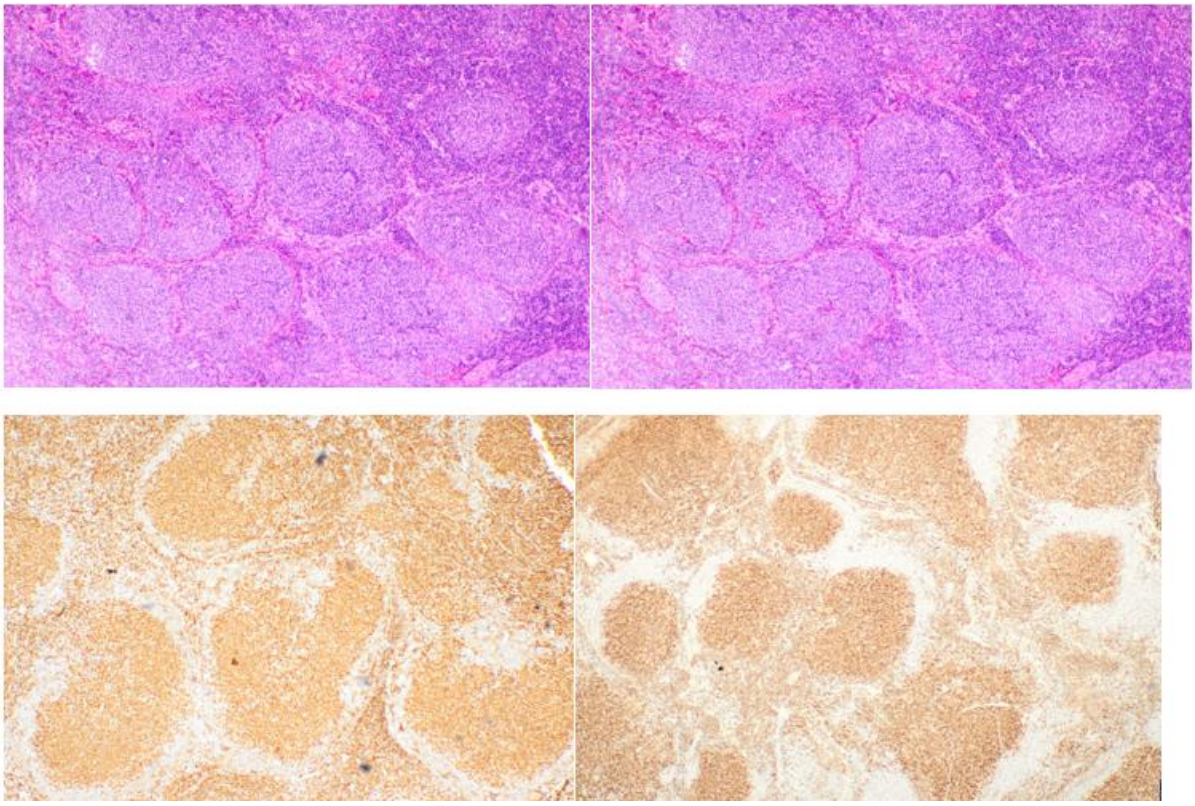

Figure 4: Follicular Lymphoma: Effacement of lymph node architecture, back-to-back follicles with attenuated mantle zone. Bcl2 and CD 10 IHC confirming the diagnosis

The follicular lymphoma was staged clinically as at least Stage III. Following Multi-Disciplinary Team (MDT) discussion, it was determined that treatment for FL was not immediately indicated based on NCCN 2024 guidelines. The patient subsequently underwent total thyroidectomy with regional lymph node clearance. Histopathology confirmed papillary thyroid carcinoma, staged as pT1bNx. Postoperative radioactive iodine therapy was administered. Genetic testing via a hereditary cancer mutation panel revealed no pathogenic mutations.

OUTCOME AND FOLLOW-UP

One year following surgery, the patient remains clinically stable and under routine surveillance by oncology, hematology, and endocrinology teams. The suspicious breast lesion was biopsied and excised, with histopathology confirming a benign intraductal papilloma.

DISCUSSION

Synchronous malignancies involving PTC and other primary tumors have been documented, with hematologic malignancies among the more frequently reported associations [7,8]. The incidence of concurrent hematologic cancers in patients with PTC is estimated at approximately 7% [9].

The etiology of such dual malignancies remains unclear. Genetic predisposition is a proposed factor, with EZH2 gene mutations implicated in both FL and thyroid cancers [10]. Autoimmune conditions, such as Hashimoto's thyroiditis, have also been associated with both PTC and thyroidal or extra-thyroidal lymphomas [11,12]. In our case, there was no history of radiation exposure, autoimmune disease, or identifiable pathogenic mutations, suggesting the coexistence may be coincidental.

PTC is typically treated with surgical resection-either lobectomy or total thyroidectomy—often resulting in excellent long-term outcomes [13]. Our patient underwent total thyroidectomy followed by radioactive iodine ablation, with no recurrence at one-year follow-up.

In contrast, FL is a slow-growing lymphoma that often follows a watchful waiting approach unless symptomatic or associated with a high tumor burden. Despite staging at least Stage III, our patient remained asymptomatic, and active surveillance was chosen in accordance with NCCN 2024 guidelines. This aligns with current evidence supporting observation in asymptomatic, low-burden FL [14].

This case underscores the importance of comprehensive nodal assessment and histological evaluation in patients with known malignancy. Detailed imaging and biopsy were instrumental in distinguishing between metastatic disease and a second primary malignancy, allowing for accurate diagnosis and tailored management. Multidisciplinary collaboration played a vital role in this diagnostic and therapeutic pathway.

CONCLUSION

We report a rare case of synchronous papillary thyroid carcinoma and follicular lymphoma, diagnosed incidentally during preoperative evaluation. This case highlights the critical importance of thorough lymph node assessment and tissue diagnosis in patients with malignancy, to ensure detection of potential secondary primaries or metastatic disease and to guide appropriate management.

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