

Rare Presentation of Classical Hodgkin Lymphoma in the Thyroid Gland: A Case Report

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Abstract

Case Report

Background: Primary thyroid lymphoma (PTL) is a rare malignancy accounting for only 2–5% of thyroid cancers and less than 3% of extranodal lymphomas. Most cases are non-Hodgkin lymphomas, particularly diffuse large B-cell lymphoma and mucosa-associated lymphoid tissue lymphoma. Primary Hodgkin lymphoma (HL) of the thyroid is exceptionally uncommon, with very few cases reported worldwide. Diagnosis is often challenging, as clinical and radiological features mimic other thyroid malignancies, and fine-needle aspiration cytology (FNAC) frequently proves inconclusive. **Case presentation:** We report the case of a 62-year-old woman with no significant past medical history who presented with a progressively enlarging anterior cervical mass of one year duration. Clinical examination revealed a firm, asymmetric goiter with ipsilateral small cervical lymphadenopathy but no compressive symptoms. Ultrasound demonstrated a large hypoechoic mass in the left thyroid lobe (EU-TIRADS 5) and suspicious cervical nodes. Thyroid function tests were normal. FNAC was non-diagnostic, and the patient underwent total thyroidectomy with prophylactic central neck dissection. Histopathology and immunohistochemistry confirmed a classical Hodgkin lymphoma, nodular sclerosis subtype (CD30+, CD15+, weak PAX5+, Ki-67 index 40%). Staging PET-CT revealed no other disease sites, classifying the case as Ann Arbor stage IE. The patient received ABVD chemotherapy, achieving complete metabolic response after two cycles, and remains in remission at 8 months follow-up. **Conclusion:** Primary Hodgkin lymphoma of the thyroid is an exceptionally rare diagnosis that should be considered in patients with atypical thyroid masses, particularly when cytology is inconclusive. Definitive diagnosis relies on histopathology and immunohistochemistry. While surgery may be required for diagnosis, systemic therapy with ABVD chemotherapy remains the standard treatment, with excellent prognosis when diagnosed at an early stage. This case highlights the importance of early recognition and multidisciplinary management of this rare entity.

Keywords: Primary Thyroid Lymphoma, Hodgkin Lymphoma, Nodular Sclerosis, ABVD Chemotherapy, Case Report.

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INTRODUCTION

Primary thyroid lymphoma (PTL) is an uncommon malignancy representing only 2–5% of all thyroid cancers and less than 3% of all extranodal lymphomas (Bhutani, 2017). It typically arises in the setting of chronic lymphocytic thyroiditis, particularly Hashimoto's disease, and occurs predominantly in older women. The vast majority of PTL cases are non-Hodgkin lymphomas, most frequently diffuse large B-cell lymphoma and mucosa-associated lymphoid tissue lymphoma (Liang *et al.*, 2016).

In contrast, Hodgkin lymphoma (HL) of the thyroid is exceedingly rare, with only sporadic cases

reported in the literature (Hadri *et al.*, 2017). Its clinical presentation often mimics other thyroid malignancies, making diagnosis challenging, especially given the limited sensitivity of fine-needle aspiration cytology. Treatment strategies generally follow conventional protocols used for nodal HL, such as ABVD chemotherapy.

We report the case of a 62-year-old woman with primary classical Hodgkin lymphoma of the thyroid, nodular sclerosis subtype, highlighting the diagnostic challenges, therapeutic approach, and favorable short-term outcome.

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CASE PRESENTATION

A 62-year-old woman, with no relevant past medical or surgical history, presented with a progressively enlarging anterior cervical swelling of one year's duration. She reported no pain, dyspnea, dysphonia, or systemic symptoms. On examination, a firm, asymmetric goiter was noted, more prominent on the left side, with small mobile lymph nodes palpable in the left cervical region.

Neck ultrasound revealed an enlarged left thyroid lobe, completely replaced by a hypoechoic mass with irregular margins, classified EU-TIRADS 5, highly suspicious for malignancy. Several small suspicious lymph nodes were also identified. Thyroid function tests were normal. Fine-needle aspiration cytology was inconclusive, and a total thyroidectomy with

prophylactic central neck dissection was performed. (Figure 1)

Histopathology showed an atypical lymphoid proliferation infiltrating nodal tissue (Figure 2), with immunohistochemistry positive for CD30 and CD15, heterogeneous positivity for PAX5 and CD20, negative CD3, and a Ki-67 index of 40%. These findings were consistent with classical Hodgkin lymphoma of the thyroid, nodular sclerosis subtype.

Staging with CT and PET-CT demonstrated no other disease involvement, and the case was classified as stage IE (Ann Arbor). The patient was referred to hematology and started on ABVD chemotherapy. She tolerated treatment well, and PET-CT after two cycles showed complete metabolic response. At eight months of follow-up, she remains in complete remission without recurrence.



Figure 1: Operative view of the gland



Figure 2: Macroscopic appearance of the tumor after sectioning

DISCUSSION

Epidemiology

Primary thyroid lymphoma (PTL) is a rare malignancy, accounting for 2–5% of all thyroid cancers and about 2–3% of all extranodal lymphomas (Bhutani, 2017). Its annual incidence is estimated at 1–2 cases per million individuals, with a marked female predominance (female-to-male ratio 3:1) and peak incidence in the sixth to seventh decades of life (Liang *et al.*, 2016).

The majority of PTL cases are non-Hodgkin lymphomas (NHL), particularly diffuse large B-cell lymphoma (DLBCL) and mucosa-associated lymphoid tissue (MALT) lymphoma (Graff-Baker *et al.*, 2009). Primary Hodgkin lymphoma (HL) of the thyroid is exceedingly rare, with only sporadic case reports documented worldwide (Hadri *et al.*, 2017). The nodular sclerosis subtype, as in our patient, is one of the rarest presentations.

Risk Factors

The most consistent risk factor for PTL is chronic autoimmune thyroiditis (Hashimoto's thyroiditis), which confers a 60-fold increased risk compared to the general population (Lanham *et al.*, 2021). Other reported associations include Graves' disease and other autoimmune syndromes.

Clinical and Paraclinical Features

Clinically, PTL typically presents as a rapidly enlarging, firm, anterior cervical mass, sometimes with compressive symptoms (dyspnea, dysphagia, hoarseness). However, unlike DLBCL, Hodgkin's thyroid lymphoma may evolve more indolently, mimicking differentiated thyroid carcinoma as in our observation.

Ultrasound and CT imaging often reveal a hypoechoic, infiltrative thyroid lesion with suspicious lymphadenopathy. Fine-needle aspiration cytology (FNAC), although widely used, has limited diagnostic yield in PTL due to sampling errors and cytological overlap with thyroiditis. In our case, FNAC was inconclusive, necessitating surgical excision for definitive histology. Immunohistochemistry remains essential for diagnosis, demonstrating the classical immunophenotype of HL (CD30+, CD15+, PAX5+ weak, CD20 variable, CD3–).

Treatment Modalities

Treatment strategies differ depending on histological subtype. For non-Hodgkin PTL, chemotherapy with or without radiotherapy is standard. In contrast, Hodgkin thyroid lymphoma is managed according to conventional HL protocols, most often ABVD chemotherapy with or without consolidative radiotherapy (Hadri *et al.*, 2017).

Surgery plays a limited role, primarily for diagnosis or in cases of compressive symptoms. Conservative management with systemic therapy is preferred once diagnosis is established. Our patient achieved complete metabolic response after two cycles of ABVD, consistent with favorable outcomes reported in the literature.

Prognosis

Prognosis in PTL depends on histological subtype, stage, and age. DLBCL carries a less favorable prognosis compared to MALT, whereas HL of the thyroid, though rare, generally shows good response to standard HL therapy. In a SEER-based cohort of 1,408 PTL patients, median survival was 9.3 years, with stage and histology being the strongest predictors (Graff-Baker *et al.*, 2009).

Our patient, diagnosed at Ann Arbor stage IE and treated with ABVD, remains in complete remission at 8 months follow-up, supporting the evidence of excellent prognosis when early diagnosis and systemic therapy are achieved.

CONCLUSION

Primary Hodgkin lymphoma of the thyroid is an exceptionally rare clinical entity that can mimic more common thyroid malignancies, leading to diagnostic uncertainty. Our case underscores the limited diagnostic yield of fine-needle aspiration and the crucial role of surgical excision followed by immunohistochemistry in establishing a definitive diagnosis. Once confirmed, treatment with ABVD chemotherapy remains the cornerstone, with excellent short-term outcomes as seen in our patient.

Given the rarity of this condition, each new case contributes valuable clinical insights. Early recognition and multidisciplinary management are essential to achieving remission and optimizing prognosis.

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