

Case Report

International Journal of Medical Case Reports

Primary Thyroid Diffuse Large B-Cell Lymphoma Presenting As A Rapidly Progressive Compressive Goitre: A Case Report.

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ABSTRACT

Background:

Primary thyroid lymphoma (PTL) is a rare extranodal lymphoma that typically arises in a background of chronic autoimmune thyroiditis and often presents as a rapidly enlarging goitre with compressive symptoms, closely mimicking anaplastic or other aggressive thyroid malignancies. Diffuse large B-cell lymphoma (DLBCL) is the most common high-grade PTL subtype and may progress abruptly, making prompt tissue diagnosis and immunophenotyping essential to guide lymphoma-directed therapy.

Case report:

A 52-year-old woman presented with a rapidly enlarging anterior neck mass associated with fever, dysphagia, and respiratory distress. Examination revealed a solid thyroid mass measuring approximately 10 × 6 × 5 cm with irregular surface and diffuse cervical lymphadenopathy. Due to progressive pressure symptoms, she underwent isthmulobectomy at a rural hospital. Initial histopathology showed lymphocytic thyroiditis with atypical lymphoid proliferation suspicious for intermediate-to-large cell non-Hodgkin lymphoma. Postoperative ultrasonography demonstrated multiple bilateral cervical lymphadenopathies (levels III–IV) and right thyroid fossa lymphadenopathy, with spongiform lesions in the contralateral lobe. After referral, immunohistochemistry confirmed DLBCL with CD20 positivity, CD3 negativity, and a high proliferative index (Ki-67: 95%). Staging with thoracic computed tomography revealed subcarinal lymphadenopathy without pulmonary metastases; disease was classified as stage IIE (extranodal organ with regional nodes). The patient was treated with immunochemotherapy (R-CHOP) and remained clinically well during the third cycle.

Conclusion:

PTL should be strongly considered in patients—particularly women with thyroiditis—who develop a rapidly progressive goitre with compressive symptoms and cervical lymphadenopathy. Adequate tissue sampling with immunohistochemistry is critical for distinguishing DLBCL from thyroid carcinoma and for enabling timely initiation of rituximab-based chemotherapy, which can achieve favorable early outcomes and help avoid unnecessary extensive surgery.

Keywords: *Diffuse Large B-Cell Lymphoma, Goitre, Immunochemotherapy, Thyroid Neoplasms, Thyroiditis.*

INTRODUCTION:-

Primary thyroid lymphoma (PTL) is an uncommon extranodal lymphoma arising within the thyroid gland. It is clinically important because it often presents as a rapidly enlarging anterior neck mass with compressive symptoms and can mimic aggressive thyroid carcinoma. PTL accounts for only a small fraction of thyroid malignancies (roughly 1–5%) and extranodal lymphomas (about 1–2%), with a clear predilection for women and older age groups. It is most frequently seen in the sixth to seventh decades of life.¹ The dominant histology is B-cell non-Hodgkin lymphoma with diffuse large B-cell lymphoma (DLBCL) representing the most frequent high-grade subtype and typically demonstrating a more abrupt course than indolent mucosa-associated lymphoid tissue (MALT) lymphoma. From a clinical standpoint, the hallmark is a rapidly progressive goitre that may be accompanied by dysphagia, dyspnea, hoarseness or cervical lymphadenopathy. These clinical features trigger urgent evaluation because of airway risk and the need to distinguish PTL from anaplastic thyroid carcinoma and other infiltrative thyroid diseases.²

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International Journal Of Medical Case Reports (ISSN 2455-0574) is an indexed medical journal indexed in Index Copernicus

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The biological underpinnings of PTL are closely linked to chronic autoimmune inflammation, particularly Hashimoto's thyroiditis, which creates an acquired intrathyroidal lymphoid microenvironment capable of malignant transformation. Conceptually, chronic antigenic stimulation and persistent lymphocytic infiltration may promote lymphoid follicle formation and clonal B-cell expansion, thereby enabling evolution toward indolent marginal zone or MALT lymphoma or an aggressive DLBCL phenotype. This spectrum is clinically relevant because histologic subtype, tumor kinetics, and treatment responsiveness differ substantially: indolent disease may remain localized for prolonged periods, while DLBCL often presents with bulky, fast-growing masses and systemic "B symptoms," and carries a higher risk of rapid airway compromise. Accordingly, PTL occupies a unique intersection between endocrine surgery, hematopathology, and lymphoma oncology, where accurate early classification directly informs prognosis and therapy.³

Despite advances in imaging and cytopathology, the diagnosis of PTL remains challenging in routine practice. Ultrasonography may demonstrate a markedly hypoechoic and infiltrative pattern but these features are not pathognomonic of lymphoma and may overlap with the features of thyroiditis and even with poorly differentiated thyroid carcinoma. Fine-needle aspiration (FNA) may suggest lymphoma in expert hands, however sampling limitations and interpretive overlap with chronic lymphocytic thyroiditis can delay definitive diagnosis. Core needle biopsy (CNB) has therefore gained importance because it provides tissue architecture sufficient for immunohistochemistry, flow cytometry, and molecular studies, while potentially reducing the need for diagnostic surgery in selected cases. Because treatment decisions depend on lineage and grade, immunophenotyping is pivotal: DLBCL is typically CD20-positive with a high proliferation index (Ki-67), and T-cell markers such as CD3 are negative. In many settings, patients undergo surgery for compressive symptoms or presumed carcinoma before lymphoma is confirmed, underscoring that "thyroidectomy-first" pathways can occur when preoperative cytology is non-diagnostic or when obstruction mandates urgent intervention.⁴

Management of PTL has shifted over time from surgical extirpation toward multimodality, lymphoma-directed therapy. Contemporary evidence supports chemotherapy as the backbone for aggressive histology, with immunochemotherapy (e.g., rituximab plus CHOP—R-CHOP) improving outcomes in CD20-positive disease and radiotherapy often used as consolidation for localized presentations.⁵

Against this background, important knowledge gaps persist in the real-world diagnostic pathway of PTL—especially DLBCL—because the condition is rare, frequently masquerades as other thyroid malignancies, and may prompt urgent surgery before tissue diagnosis is optimized. The present case report describes a middle-aged woman with a rapidly enlarging compressive thyroid mass and cervical lymphadenopathy in whom DLBCL was confirmed by histopathology and immunohistochemistry, followed by favorable clinical response to R-CHOP. By detailing the clinical trajectory, investigations, histologic confirmation, and treatment response, this report aims to strengthen clinical suspicion for PTL in fast-growing goiters, emphasize the role of adequate tissue sampling and immunophenotyping, and illustrate how early recognition of DLBCL enables timely initiation of immunochemotherapy and avoidance of potentially non-beneficial extensive surgery—thereby addressing a practical gap between guideline principles and on-the-ground presentation patterns in compressive thyroid emergencies.

CASE REPORT: -

Our patient was a 52-year-old female who presented with a complaint of a rapidly enlarging mass in her neck. Her clinical presentation was accompanied by systemic symptoms, including fever, as well as pressure symptoms such as dysphagia (difficulty swallowing) and respiratory distress. Physical examination identified a solid, palpable thyroid nodule measuring 10x6x5 cm with an irregular surface, along with diffuse cervical lymphadenopathy. No peripheral lymphadenopathy outside the cervical region was noted. (Figure 1).



Figure 1. Preoperative clinical images of anterior neck mass

Laboratory evaluation included thyroid function testing (TSH, free T4) and baseline hematology/biochemistry prior to oncologic therapy. Due to the pressure symptoms, the patient underwent an isthmolobectomy at a rural hospital. The initial pathological report described lymphocytic thyroiditis with atypical lymphoid proliferation suspicious for Non-Hodgkin Lymphoma (NHL), specifically of the intermediate to large cell type. Post-operative thyroid ultrasound revealed multiple bilateral lymphadenopathy at levels 3 and 4, as well as in the right thyroid fossa, alongside multiple spongiform lesions in the left thyroid lobe (Figure 2).

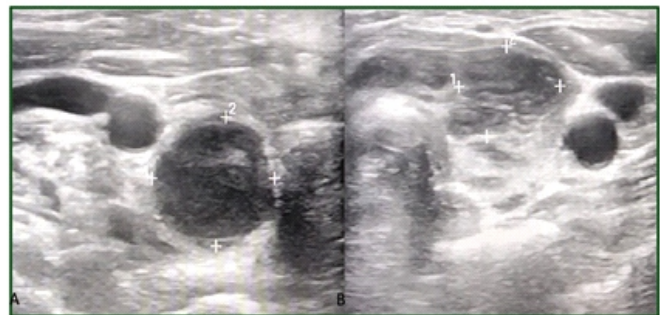


Figure 2. A. Post operative thyroid US: multiple lymphadenopathies in right thyroid fossa. B. Thyroid US: multiple Spongiform lesions in left thyroid lobe with multiple lymphadenopathy.

The patient was subsequently referred to Sardjito Central General Hospital for further management. Immunohistochemical studies were performed, showing positivity for CD20 and negativity for CD3, with a high Ki67 proliferation index of 95%. Based on these findings, the final histopathological diagnosis was consistent with Diffuse Large B-Cell Lymphoma (Figure 3 and Figure 4).

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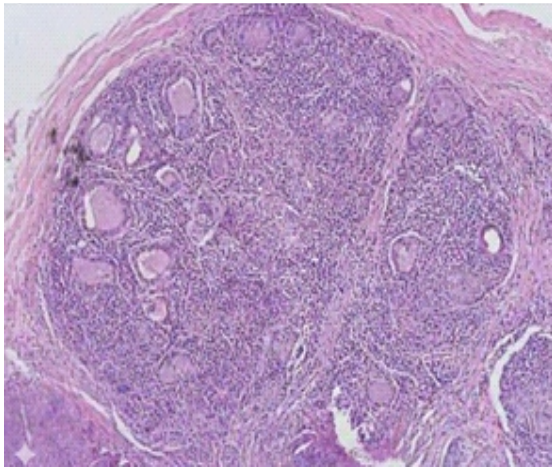


Figure 3. Diffuse infiltration of atypical lymphoid and small follicles consisting of thyrocytes (Hematoxylin Eosin stain X2)

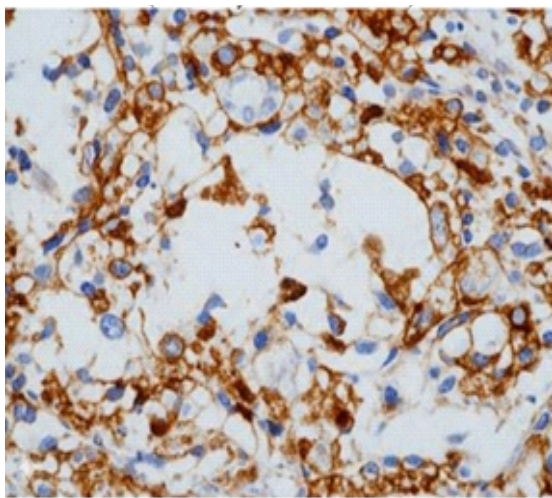


Figure 4: Diffuse large B-cell NHL in CD20 positive neoplastic cell (X20).

Screening for metastasis was done by thyroid ultrasound and thoracic CT scan, which revealed lymphadenopathy at the subcarinal level but no evidence of pulmonary parenchymal lesions (Figure 5).



Figure 5. No distant metastasis on Computed Tomography.

According to the Ann-Arbor Staging System, the disease was classified as stage IIE (extranodal organ with regional nodes). The patient is currently undergoing chemotherapy with the R-CHOP regimen and is in good condition during her 3rd cycle.

DISCUSSION

Primary Thyroid Lymphoma (PTL) is an uncommon thyroid tumor that predominantly affects middle-aged to elderly women. The most frequently encountered histological subtypes are MALT lymphoma and diffuse large B-cell non-Hodgkin lymphoma. Clinically, PTL may manifest as a rapidly growing neck mass accompanied by symptoms such as dysphagia, stridor, hoarseness, or other signs of local compression. These clinical features share similarities with anaplastic thyroid carcinoma, making diagnosis challenging. On physical examination, the tumor typically presents as a firm mass that is often difficult to distinguish from the trachea or esophagus. The differential diagnosis should include salivary gland neoplasms, thyroglossal duct cysts, laryngoceles, teratomas, dermoid cysts, thymic cysts, paragangliomas, neurinomas, and lipomas.⁶

Research by Lapadat et al. indicates that the majority of primary thyroid lymphomas arise in the setting of chronic thyroiditis or Hashimoto's thyroiditis.⁷ Consequently, thyroid lymphoma should be suspected in patients with Hashimoto's thyroiditis who exhibit persistent thyroid enlargement despite appropriate thyroxine replacement therapy. Furthermore, approximately 30–40% of patients may present with hypothyroidism.⁸ Fine Needle Aspiration Biopsy (FNAB) is often sufficient for diagnosis when the samples are reviewed by an experienced cytologist. Cytological findings typically show numerous large neoplastic cells with scant to moderate cytoplasm, irregular nuclear contours, and prominent nucleoli set against a background of small lymphocytes.⁹

A study by Matsuzuka et al. demonstrated that among 83 patients assessed with FNAB, 78.3% were accurately diagnosed, while 12% yielded borderline results.¹⁰ Thus, nearly 90% of thyroid lymphoma cases can be diagnosed or strongly suspected based on FNAB findings. However, to histologically confirm the diagnosis and determine the malignancy grade, an open biopsy obtaining 2–3 grams of tissue is recommended for all cases. Our patient was diagnosed following surgical excision (isthmulobectomy). It is important to note that thyroid lymphoma can coexist with other primary thyroid neoplasms (papillary, follicular, or anaplastic); therefore, immunohistochemical staining with monoclonal antibodies is essential alongside standard histopathological analysis.¹¹

Data from the Mayo Clinic suggest that high cure rates and disease-free survival can be achieved with thyroidectomy followed by adjuvant radiotherapy (RT).¹² Current consensus, however, suggests that surgery should be reserved primarily for histological diagnosis. Cervical-mediastinal RT is considered the initial treatment of choice for patients with a favorable prognosis and disease confined to the thyroid. A study involving 31 patients with primary thyroid MALT lymphoma reported a 90% 5-year survival rate with RT alone.¹³ For high-grade lymphomas or those with extracapsular extension, a combination of RT and chemotherapy (CT) is required. The CHOP regimen (cyclophosphamide, Adriamycin, vincristine, prednisolone) combined with Rituximab has been shown to be the most effective therapy for disease-free survival.¹⁴

It is recommended that while pathological diagnosis should be confirmed via FNAB, chemotherapy is preferred as the initial treatment in cases of recurrence or systemic disease. The addition of Rituximab, which targets the CD20 surface antibody, significantly improves outcomes. In our case, the patient received combined treatment and has a good prognosis. Clinicians must be vigilant regarding neutropenic fever, a common side effect of CHOP-Rituximab therapy. The grade of the tumor is a critical prognostic factor; the 10-year

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survival rate for low-grade lymphoma is 75%, whereas the 5-year survival rate for high-grade disease drops to less than 50%.¹⁵ Advanced age and extracapsular extension also negatively impact prognosis. Our patient received chemotherapy post-surgery due to pressure symptoms and is currently being followed up with no evidence of residual disease.

CONCLUSION

Diagnosing Primary Thyroid Lymphoma is challenging due to its rarity. Clinicians must maintain a high index of suspicion, particularly when evaluating patients with chronic lymphocytic thyroiditis who present with a rapidly enlarging thyroid gland or cervical lymphadenopathy. Literature supports Radiotherapy (RT) as the most adequate treatment for patients with low-grade lymphoma, while Chemotherapy (CT) should be incorporated into the treatment regimen for those with high-grade lymphoma.

Conflict Of Interest: None

Source of Funding: None

Consent: Obtained from Patient.

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Author Contribution : DF: Contributed to patient management, data collection, and drafting of the manuscript. **RAW:** performed data interpretation, critical revision of the manuscript, supervised the study, and approved the final version.

Received : 05-01-2026

Revised: 10-02-2026

Accepted : 25-02-2026