

## Case Report

# Diagnostic Fine Needle Aspiration Cytology of Primary Thyroid Lymphoma

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### Abstract

Primary thyroid lymphomas (PTL) are extremely uncommon neoplasms accounting for 5% of all thyroid malignancies. There are very few small series and occasional case reports of fine needle aspiration cytology (FNAC) of PTL in literature. We present an interesting and rare case of PTL diagnosed on FNAC. FNAC is an important tool in the diagnosis of thyroid lymphoma.

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**Key Words:** Thyroid, lymphoma, FNAC.

### Introduction

Primary thyroid lymphomas (PTL) are rare neoplasms accounting for 5% of all thyroid malignancies.<sup>1</sup> There are very few small series and occasional case reports of fine needle aspiration cytology (FNAC) of PTL in literature.<sup>2,3</sup> We present an interesting and rare case of PTL diagnosed on FNAC. FNAC plays a very important role in the diagnosis of thyroid lymphoma. The two most important critical diagnoses in FNAC of thyroid are lymphoma and anaplastic carcinoma as these avoid unnecessary surgery.

### Case History

A 49 years old female presented with a thyroid swelling of 10 months duration. There was history of rapid increase in the size in the last 2 months. There was no history of previous radiation therapy. T<sub>3</sub>, T<sub>4</sub> and TSH levels were within normal limits. On local examination there was a 15x10 cm large firm, diffuse thyroid swelling. Ultrasonography showed picture suggestive of multinodular goitre. FNAC was carried out and wet fixed smears were stained by Papanicolaou (PAP) stain and air dried smear were stained by May-Grünwald Giemsa stain. The smears showed sheets of atypical small and intermediate sized lymphoid cells (Fig. 1). Lymphoglandular bodies were also seen. There was absence of thyroid follicular cells, Hurthle cells and colloid. Patient had no lymphadenopathy clinically and on ultrasonography. Considering all these features the diagnosis of primary lymphoma of thyroid was made. Subsequently a gun biopsy of the thyroid mass was done

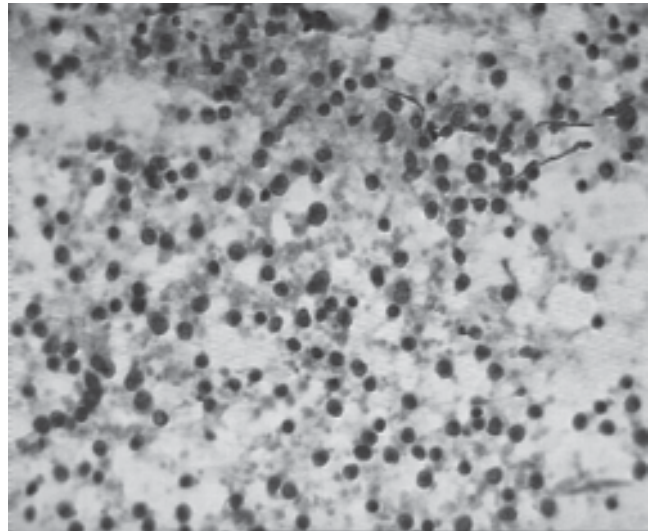


Fig. 1 : Atypical small and intermediate sized lymphoid cells (PAP, x 400).

for typing of the lymphoma (Fig. 2). The final diagnosis on histology and immunohistochemistry was high-grade non Hodgkin's B cell lymphoma (CD20 positive). The patient was started on chemotherapy. She responded to the therapy and there was regression of the thyroid mass. She was free of the tumour for 6 months after therapy.

### Discussion

Primary lymphomas of the thyroid gland are uncommon and comprise 5% of all thyroid

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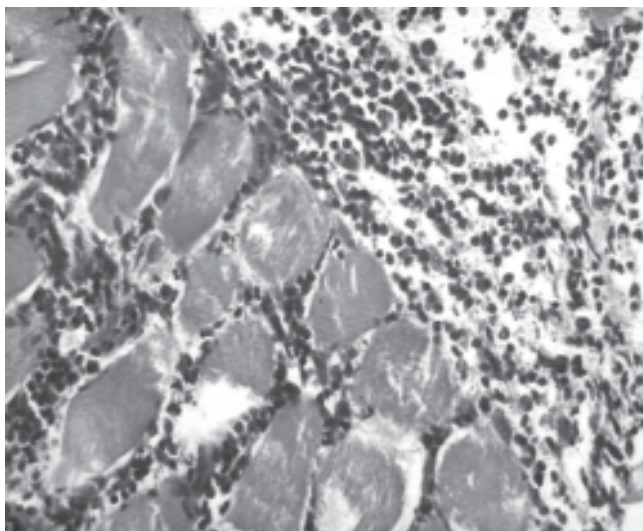


Fig. 2 : Gun biopsy showing lymphoma cells infiltrating skeletal muscle (H&E, x 400).

malignancies.<sup>1</sup> They occur more commonly in the middle aged and elderly women.<sup>1</sup> Our case was a 49 years old female with a 15x10 cm neck mass which was rapidly growing in the last 2 months. They clinically present with a rapidly growing mass, dysphagia, stridor or change in voice.<sup>1,4</sup> FNAC is a useful tool in the diagnosis of PTL. High grade lymphomas can be diagnosed easily on FNAC but the low grade lymphomas may be mistaken for chronic thyroiditis.<sup>2,4</sup> In thyroiditis, a polymorphic mixed population of mature and transformed lymphocytes is seen. The presence of a monotonous population of large atypical lymphocytes or rarely small cells is seen in lymphoma.<sup>5</sup> In our case the PAP smears showed sheets of atypical small and intermediate sized lymphoid cells due to which we had difficulty but the Giemsa stained sections showed monotonous cell population. The changes in PAP smears could be attributed to fixation changes.

Most PTLs appear in the context of mucosal associated lymphoid tissue (MALT), and some of them are related to Hashimotos thyroiditis (HT).<sup>1,4-6</sup>

The diagnostic difficulty on FNAC occurs when the aspirate consists of both neoplastic (lymphoma cells) and non-neoplastic (thyroiditis) elements. The other close differential diagnosis on FNAC is small cell anaplastic carcinoma. Cell clustering, nuclear

moulding and tear drop cells favour small cell anaplastic carcinoma.<sup>4</sup>

Most PTL are non Hodgkin's B cell lymphomas (small/large cells) or MALT lymphomas.<sup>1,4-6</sup> T cell lymphomas are exceedingly rare.<sup>1,4,5</sup> Chemotherapy is the mainstay of treatment. Surgical debulking is done if the mass is very large and is causing mechanical discomfort. Radiotherapy is required in cases of recurrences and local spread. The 10 year survival rate is around 75%.<sup>1,4</sup> They can show local recurrence, metastasis to soft tissue, lymph nodes and even to other MALT sites like GIT.<sup>7</sup>

FNAC plays an important role in the diagnosis of thyroid lymphoma, and it is imperative to use this as a diagnostic aid in these cases. The two most important critical diagnoses in FNAC of thyroid are lymphoma and anaplastic carcinoma. Proper evaluation of aspirates in these cases can avoid unnecessary surgery. As lymphoma of thyroid was diagnosed on FNAC in our case the patient received chemotherapy immediately and showed good response to the therapy. Surgical morbidity and mortality was prevented.

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