Case Report

Primary thyroid lymphoma in the background of Hashimoto thyroiditis

Muniyappa Usha, Sulatha Kamath, M. Sridhar[1], Sharath Soman

Departments of Pathology and [1]Surgery, M. S. Ramaiah Medical College, Bengaluru, Karnataka, India

ABSTRACT

Primary thyroid lymphomas (PTLs) constitute only 1–2% of all extranodal lymphomas and approximately 2–8% of all thyroid malignancies. Thyroid non-Hodgkin lymphoma (NHL), though not common, is curable without the need for extensive surgery. Fine-needle aspiration cytology (FNAC) has become the procedure of choice for the initial diagnosis of thyroid nodule, but there are very few reports of FNAC of PTL in the literature. Most common thyroid lymphomas are diffuse, large, B-cell lymphoma (DLBCL), and mucosa-associated lymphoid tissue lymphoma (MALT). When dealing with DLBCL, the main cytological differential diagnosis to be kept in mind is anaplastic thyroid carcinoma. Differentiating these entities is required at the cytological level as both require different treatments, in fact, DLBCL can be treated by chemotherapy while anaplastic thyroid carcinoma by surgical excision. Diagnosis of MALT, which is a low-grade NHL is difficult on FNAC as it closely resembles Hashimoto thyroiditis (HT). We report herein a case of 52-year-old female, suffering from HT since 10 years, who developed a thyroidal DLBCL. This case emphasizes the role of FNAC as a good diagnostic tool that, followed by Tru-cut biopsy for accurate PTL typing, can avoid the morbidity associated with surgery.

Key words: Fine-needle aspiration cytology, Hashimoto thyroiditis, primary thyroid lymphoma, Tru-cut biopsy

INTRODUCTION

Primary thyroid lymphomas (PTLs) constitute only 1–2% of all extranodal lymphomas and approximately 2–8% of all thyroid malignancies.[1,2] Most PTLs are B and T-cell non-Hodgkin lymphomas (NHLs), whereas primary thyroid Hodgkin lymphoma has been occasionally reported. A high percentage of PTLs affects patients suffering from long-standing Hashimoto thyroiditis (HT), therefore, PTL pathogenesis is probably related to chronic inflammatory stimulation.[1,2] Fine-needle aspiration cytology (FNAC) has become the procedure of choice for the initial diagnosis of thyroid nodule followed by Tru-cut biopsy and immunohistochemistry. The advantages of FNAC diagnoses are enhanced in a case of PTL, which does not require surgical treatment, and even more in elderly patients, for whom surgery is generally more burdensome, complex, and expensive than younger patients. There are few reports of FNAC of PTL in the literature.[3-10] We present a case of PTL diagnosed by FNAC based on distinctive cytological features. The aim of the study was to highlight the role of FNAC in the initial diagnosis of PTL and its diagnostic difficulties.

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CASE REPORT

A 52-year-old female complained of dysphagia, dyspnea, and a rapidly enlarging thyroidal mass since 2 months; the patient complained for a changing of voice since 1-month. She suffered from HT and was on therapy since 10 years. The patient was referred to our department for an FNAC of a prominent mass of the neck. On examination, we found a firm, diffusely enlarged thyroid mass which was partial moving at the deglutition. FNAC was performed under aseptic precautions with a 23-gauge needle and prepared smears were stained with Papanicolaou, Giemsa, and hematoxylin-eosin stains. Smears were highly cellular showing dyscohesive sheets of cells with large vesicular nuclei and 1–3 prominent nucleoli [Figure 1a]. Numerous mitotic figures, karyorrhectic debris, and occasional lymphoglandular bodies were noted too. There were no cell clustering and nuclear molding, and the background showed scanty colloid. Based on the cytomorphological features,

Address for correspondence: Dr. Muniyappa Usha, 150, 9th Cross, HIG Colony, Bengaluru - 560 094, Karnataka, India.
E-mail: usharavihitha@gmail.com

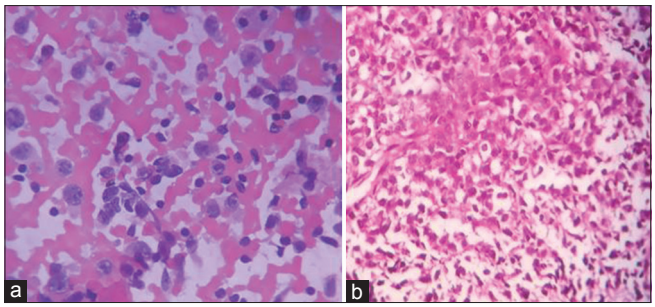

Figure 1: (a) Dyscohesive sheets of atypical cells having large vesicular nuclei and 1–3 prominent nucleoli. (b) a monotonous population of intermediate to large atypical lymphoid cells

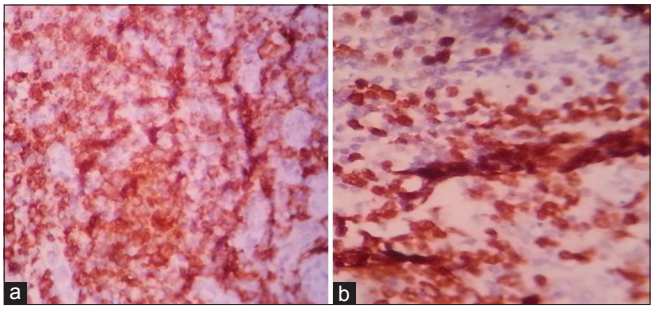

Figure 2: (a) Tumor cells positive for CD20, (b) high Ki-67 proliferative index

a diagnosis suspicious of NHL was pointed out. Tru-cut biopsy and immunohistochemistry for confirmation and typization of the lesion were advised. Tru-cut biopsy showed a monotonous population of intermediate to large atypical lymphoid cells [Figure 1b]. Tumor cells were arranged in sheets and had large vesicular nuclei with 1–3 prominent nucleoli and scanty cytoplasm. Many mitotic figures and karyorrhectic debris were noted. Based on these features, a diagnosis NHL was given. Immunohistochemistry showed diffuse positivity for CD45, CD20 [Figure 2a], CD10 and CD5 negativity. Ki-67, proliferative marker labeled 80% of the tumor cells [Figure 2b]. Final diagnosis of primary thyroidal diffuse, large, B-cell lymphoma (DLBCL) was achieved.

DISCUSSION

Primary thyroid lymphoma is defined as a lymphomatous process involving the thyroid gland without contiguous spread or distant metastases from other areas of involvement at diagnosis and constitutes 1–8% of all thyroid malignancies.[1] The majority of patients are middle to old aged women; rapidly enlarging neck mass often associated with dyspnea, difficulty in swallowing, or voice changes are the most frequent clinical presentation of PTL.[2] Therefore, it may be clinically confused with an anaplastic thyroid carcinoma. Hypothyroidism at the time of diagnosis is documented in 30–40% of patients due to replacement of the thyroid parenchyma by the lymphomatous process or due to underlying HT.[9] PTL typically arises in the setting of HT, and it takes an average 20–30 years to develop after the HT; that is why HT is not considered as the preneoplastic condition.[10,11]

Diffuse, large, B-cell lymphoma is the most frequent PTL[10,12] the other common subtype is mucosa-associated lymphoid tissue (MALT) that comprising of approximately 6–27% of PTL.[10,12] The importance of a preoperative diagnosis of PTL lies in the fact that this disease is quite curable without the need for extensive surgery if recognized early and appropriately treated. FNAC has become the procedure of choice for the initial pathological diagnosis of PTL and the, the features that favor the diagnosis of DLBCL are lack of cellular cohesion, pleomorphism with many showing prominent nucleoli, numerous mitotic figures and presence of lymphoglandular bodies in the background.[8] The closest differential diagnosis includes anaplastic carcinoma of the thyroid gland that show cell clustering and nuclear molding and absence of lymphoglandular bodies.[8,9] Differentiating these two entities is very important as the treatment for DLBCL is chemotherapy while surgical resection for anaplastic carcinoma. Cytological diagnosis of MALT is difficult too, because of the heterogeneous appearance of the neoplastic infiltrate.[4,12,6] Cytologically, the neoplastic cells can be monocytoid, centrocyte-like or resemble small round lymphocytes. Mitotic figures are infrequent. Many a times, lymphomatous cells are admixed with nonneoplastic cells like mature lymphocytes, plasma cells, and histiocytes leading to a cytological differential diagnosis with HT. The MALT distinguishing features might be the abundance of lymphoid cells and a high proportion of intermediate centrocyte-like cells in low-grade NHL as compared to HT which shows a more polymorphous lymphoid cells and plasma cells often with tingible body macrophages like those observed in lymph nodes along with thyroidal follicles and.[12] Immunohistochemistry is required for differential diagnosis: DLBCL are CD45, CD20, CD10, Bcl2, and Bcl6 positive with Ki-67 labeling cells > 40% of the cells. In this case, Ki-67 labeled 80% of the cells with positivity for all the other B-cell markers, favoring the diagnosis of DLBCL.

We hereby conclude that in a preexisting case of HTs, PTL has to be considered in case a sudden increase in size, dysphagia, stridor, and hoarseness of voice. In our case, since PTL was diagnosed by FNAC and was then confirmed by Tru-cut biopsy, the patient received chemotherapy instead of surgery and showed good response. This emphasizes the role of FNAC as an effective diagnostic tool where early diagnosis can be made followed by Tru-cut biopsy for accurate typing of PTL so that morbidity associated with surgery can be avoided.

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