Primary thyroid lymphoma in the setting of Hashimoto’s thyroiditis: A case report and review of the literature

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ABSTRACT

Primary thyroid lymphoma is a rare malignancy that can arise in the setting of Hashimoto’s disease. The prognosis and treatment depend on the stage and histologic subtype. Thyroidectomy or radiation alone may be considered for localized indolent lymphoma, whereas chemoradiation has been the standard for treating aggressive, diffuse B-cell lymphoma. Rituximab is a recent addition to the treatment of diffuse large B-cell lymphoma (DLBCL). Here we present a case of aggressive thyroid lymphoma in a 57 year old man with a history of Hashimoto’s thyroiditis.

INTRODUCTION

Primary thyroid lymphoma is rare, representing less than 5% of all thyroid malignancies and less than 3% of all extranodal non-Hodgkin’s lymphomas [1]. Most are non-Hodgkin’s lymphomas of B-cell origin. Pathologically these can appear as mucosa-associated lymphoid tissue (MALT) lymphoma, also referred to as extranodal marginal cell lymphoma, diffuse large B-cell lymphoma (DLBCL) or as a mixed histologic picture with features of both MALT and DLBCL [2]. Each of these subtypes is equally common. MALT lymphoma is an indolent lymphoma that tends to present at an earlier stage and is associated with a better prognosis. In contrast, DLBCL and the mixed histologic subtype are aggressive lymphomas that confer a worse prognosis and require multimodality therapy. The purpose of this case study is to familiarize the reader with the presentation, pathophysiology, diagnosis, and treatment of primary thyroid lymphomas.

CASE PRESENTATION

A 57 year old man presented to the Georgetown University Hospital in Washington, D.C. for evaluation of a neck mass. He was experiencing discomfort in the midline of his neck for three months, as well as dysphagia to solids more than liquids and shortness of breath intermittently when lying flat. At an outside institution three months prior, he was diagnosed with hypothyroidism based on abnormally elevated TSH levels. At the time of his diagnosis, his thyroid ultrasound revealed a heterogeneous, hypoechoic, multinodular goiter with both solid and cystic components (Figure 1). He subsequently underwent a thyroid biopsy which showed atypical lymphocytes, nondiagnostic for lymphoma. The patient was taken to the operating room, where he underwent a core needle biopsy of the thyroid using ultrasound guidance as well as excision of a superficial lymph node in the right posterior neck measuring 1.8 x 1.6 x 1.2 cm. Pathology from both the lymph node and the core needle biopsy of the thyroid showed DLBCL. After a further staging work-up, the patient was diagnosed with stage IIIE DLBCL. (Table 1) He subsequently began immunochemotherapy with rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone (R-CHOP) and had a complete response to 6 cycles of therapy. (Figures 1 & 2)

DISCUSSION

Primary thyroid lymphoma most commonly presents in women between the ages of 50 and 80 years old as a painless neck mass that may or may not be rapidly enlarging [1,2]. Derringer et al. suggest a statistically significant difference in presentation according to histological subtype, such that patients with DLBCL or mixed MALT with DLBCL more often presented with a rapidly enlarging mass compared to those with the more indolent MALT lymphoma. About 30% of patients present with compression symptoms, including hoarseness, dysphagia, shortness of breath, and stridor [1,2]. B type symptoms are rare [1].

Chronic lymphocytic thyroiditis or Hashimoto’s disease has been found in up to 94% of patients with primary thyroid lymphoma [2]. The relative risk of thyroid lymphoma in patients with Hashimoto’s disease is 67 to 80 times higher than the normal population [4,5]. The prevalence of Hashimoto’s disease among patients with primary thyroid lymphoma is a clue to the pathogenesis of extranodal lymphomas. For lymphoma to develop in an extranodal site, an antigenic stimulus must trigger lymphocyte proliferation in a location that is typically lymphocyte-poor. The process by which this new, lymphocytic infiltrate becomes malignant remains poorly understood, but the importance of a chronic antigenic stimulus in malignancy has long been recognized.

Isaacson and Wright [6] introduced the idea in 1985 in reference to MALT lymphoma of the stomach. This concept, more accurately termed the MALT/ELT (extranodal lymphoid tissue) concept, supports the role of a chronic antigenic stimulus in the pathogenesis of MALT lymphoma [5,6]. The correlation between Hashimoto’s disease and primary thyroid lymphoma suggests that chronic stimulation of lymphocytes by thyroiditis may be a precursor for malignant transformation.

The prognosis and treatment of primary thyroid lymphoma are dependent upon subtype and stage. MALT lymphoma of the thyroid has been noted to have a 100% disease-specific 5-year survival, whereas a lower survival is seen with MALT with DLBCL (78%) and DLBCL (71%) [2]. For localized MALT lymphoma, total thyroidectomy or radiotherapy has been shown to be curative. Prior to rituximab, treatment recommendations for DLBCL or mixed MALT with DLBCL favored locoregional radiation and chemotherapy [7]. A monoclonal B-cell antibody that selectively binds CD20 on B lymphocytes, rituximab was approved as first-line treatment for DLBCL in 2006. In a recent study by Preundshuh, et al. of 1,222 elderly patients with nodal DLBCL, the use of rituximab led to significantly improved progression-free and overall survival when compared with CHOP alone [8]. Radiotherapy was used only for sites of bulky disease. Studies on the use of rituximab in thyroid lymphoma are limited, and while data on its efficacy in nodal lymphomas can be extrapolated to the thyroid, larger scale studies specific to primary thyroid lymphoma are warranted.

CONCLUSION

Primary thyroid lymphoma is a rare malignancy that can occur in the setting of Hashimoto’s thyroiditis. Histologic subtype plays an important role in prognosis and treatment. The advent of rituximab has enhanced the treatment options for B-cell lymphoma.

REFERENCES