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ORIGINAL ARTICLE

Management for primary thyroid lymphoma: Experience from a single tertiary care centre in Taiwan

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KEYWORDS
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Summary *Background:* Diverse treatments are available for different histological types of thyroid lymphoma: concurrent chemoradiotherapy for diffuse large B cell lymphoma (DLBCL) and radiotherapy or thyroidectomy for low-grade mucosa-associated lymphoid tissue (MALT) lymphoma. However, diagnosing lymphomas before operation is difficult, because the diagnostic yield of fine-needle biopsies is limited by the rarity of the disease. Therefore, patients may undergo unnecessary thyroidectomies.
Aim(s): To investigate the efficacy of various biopsy procedures and explore indications for thyroidectomy in patients with primary thyroid lymphomas.
Methods: The demographics, types of biopsy procedures, treatments, and outcome data of patients diagnosed with primary thyroid lymphoma at Tri-Service General Hospital between 1992 and 2015 were retrospectively collected.
Results: Ten patients received a diagnosis of primary thyroid lymphomas: eight with DLBCL and two with MALT lymphoma. None of these patients received a definitive diagnosis after fine-needle aspiration biopsies; however, six patients received their diagnosis and histological-subtype classification after core-needle biopsies. Before 2004, three patients with DLBCL underwent thyroidectomies for diagnostic purposes and one encountered vocal cord palsy. By contrast, two patients with localized MALT lymphoma underwent thyroidectomies for treatment, with both experiencing favorable outcomes and prognoses.

Conflicts of interest: The authors declare no conflicts of interest.

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Conclusion: Core-needle biopsy is superior to fine-needle biopsy for diagnosing primary thyroid lymphomas without increasing complications. Thyroidectomy in localized, low-grade MALT lymphoma of the thyroid can cure the disease and exclude high-grade malignancies in the remaining glands. By contrast, DLBCL should be treated with chemotherapy and radiotherapy after diagnosis through biopsy, and extensive surgery should be avoided.

1. Introduction

Primary thyroid lymphoma is rare, accounting for <5% of thyroid malignancies.[1] The two distinct histological types of primary thyroid lymphoma are diffuse large B cell lymphoma (DLBCL) and mucosa-associated lymphoid tissue (MALT) lymphoma.[2] Because DLBCL is sensitive to chemotherapy and radiotherapy, the general consensus is to avoid extensive surgery. By contrast, radiotherapy or thyroidectomy is typically used as the initial treatment for localized MALT lymphoma. Fine-needle aspiration cytology, the most common initial diagnostic tool used in thyroid malignancies, is difficult to use for diagnosing tumor type, which is necessary for treatment planning. However, core-needle biopsy, which is less commonly used in thyroid-gland biopsies, may serve as a substitute to surgical biopsy. This study investigated the efficacy of various biopsy procedures and explored indications for thyroidectomy in patients with primary thyroid lymphoma.

2. Methods

We retrospectively surveyed patients diagnosed with primary thyroid lymphoma at Tri-Service General Hospital between 1992 and 2015. After receiving approval from the hospital Institutional Review Board (TSGHIRB: 2-102-05-108), we collected patient data from medical charts and the cancer registry database of our hospital. This information included sex, age at disease onset, history of thyroiditis, presence of significant airway compression, goiter size, lymph node involvement, types of biopsy procedures, stage of disease, modalities of treatment, major complications related to treatment, duration of follow-up, and recurrences. The tumor size and extent of involvement were assessed through computed tomography (CT). Ultrasound-guided core-needle biopsies were performed by radiologists. The extent of thyroid operations varied from lobectomy to total thyroidectomy. Pathological diagnoses were made by two pathologists who utilized both hematoxylin and eosin, as well as immunochemistry staining to differentiate lymphoma subtypes from Hashimoto's thyroiditis. The staging investigation included blood counts, blood chemistry, chest and abdominal CT, and bone-marrow biopsies. Additionally, whole-body gallium scans, whole-body bone scans, or whole-body positron emission tomography (PET)/CT was performed in some patients. Disease stage was classified according to the Ann Arbor staging system: diseases confined to the thyroid gland were classified as stage IE, and those with regional node involvement were classified as stage IIE. The final follow-up was conducted until October 31, 2015.

3. Results

Ten patients with primary thyroid lymphoma were identified. Of these, eight had DLBCL, and two had MALT lymphoma. Patient demographics, pathological diagnoses, and disease stages are listed in Table 1. In total, six women and four men were identified. The mean age at onset was 67.9 years (range, 54—83 years). All patients developed rapidly growing neck masses over months, with mean tumor size of 7.1 cm (range, 3.8—11.4 cm).

Nine patients underwent fine-needle aspiration biopsy (FNAB); of these, no patient received a definitive diagnosis. Four patients received a definitive diagnosis only after thyroidectomy. Of these four patients, three were diagnosed with DLBCL and one with MALT lymphoma. After 2004, core-needle biopsy was performed in selected cases, with six patients undergoing the procedure. Of these, five received a final diagnosis of DLBCL and one of suspected low-grade lymphoma, which was confirmed as MALT lymphoma through thyroidectomy. No complications were observed after both fine-needle and core-needle biopsies. One patient with DLBCL had vocal cord palsy after subtotal thyroidectomy for the initial diagnostic purpose.

Table 2 lists treatment types, major treatment-related complications, initial disease stages, and their corresponding outcomes. All patients with DLBCL underwent chemotherapy with a platinum-based regimen. Three patients also received adjuvant radiotherapy. Two patients with MALT lymphoma underwent thyroidectomy as the primary treatment. Patient five initially underwent a lobectomy, after which the frozen tissue section indicated benign disease, and he had subsequent completion of a thyroidectomy and adjuvant radiotherapy, because the final pathological assessment revealed Hashimoto's thyroiditis with marginal cell lymphoma (MALT lymphoma). Patient 8 underwent subtotal thyroidectomy. Neither Patient 5 nor Patient 8 underwent chemotherapy.

The mean follow-up period was 58.1 months (range, 5—123 months). Two patients with DLBCL developed recurrence. Patient 2 experienced regional recurrence along with airway compression and tracheocutaneous fistula 10 months after the operation. The patient was treated with salvage chemotherapy, with four cycles of EPOCH regimen (VP-16 + vincristine + adriamycin + methylprednisolone + cyclophosphamide) and radiotherapy, subsequently resulting in

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