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Case Report

When Size Matters: A Case of a Reactive Lymph Node As Large As Papillary Thyroid Carcinoma

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Abstract

Background: Among thyroid cancers, papillary thyroid carcinoma (PTC) is most prevalent with a good prognosis. Advances in diagnostic technology, such as ultrasounds and fine-needle aspiration, have increased thyroid cancer incidence worldwide. PTC often invades lymph nodes, leading to remote metastases. **Case Presentation**: A 37-year-old male with no medical history, a history of haemorrhoidectomy and shoulder lipoma excision, presented with left thyroid swelling without any associated symptoms, weight changes, appetite changes, fever, night sweats, or fatigue. Results of routine blood tests revealed no significant changes in free T3, free T4, and TSH. Approximately 1.7 x 0.9 cm in size, the most prominent one can be seen on the right lobe's posterior portion that was heterogeneous hypoechoic with tiny echogenic foci, consistent with TR-4. Also, CT scan showed the largest one measured around 0.5 cm in the left upper jugular lymph node level. The patient was advised to undergo surgery, which included a total thyroidectomy and a left central lymph node dissection. **Conclusion**: Around 20% to 90% of patients have lymph node involvement, predicting local recurrence and potential prognosis. Palpable thyroid nodules affect 4-7% of the population, but ultrasound can detect them in 67% of cases. The purpose of this study was to emphasize the importance of meticulously dissecting the lymph nodes and examining them under the microscope.

Keywords: Thyroidectomy; Papillary Thyroid Cancer.

Introduction

The incidence rate of thyroid cancer is rising, with papillary thyroid carcinoma (PTC) being its most common form [1]. The prognosis for PTC is favorable [2, 3]. Ultrasounds and fine-needle aspiration have made diagnostic technology more accurate and convenient in recent decades, which has led to an increase in thyroid cancer incidence rates worldwide [4]. In PTC, a high rate of invasion of the lymph nodes (LNs) accompanies the initial diagnosis and gradually leads to remote metastases [5]. The cervical lymph nodes are the most affected ones [6]. Here we present an example of the lymph node almost as large as PTC in a 37-year-old gentleman.

Case Presentation

This is a 37 years old male, not known to have any medical illnesses and not on any medication. Upon past surgical history, he did hemorrhoidectomy and right shoulder lipoma excision years ago. He presented to the primary care clinic with left thyroid swelling, with no association to dysphasia, dyspnea, stridor, shortness of breath, changes in voice, odynophagia or choking. In addition to unremarkable systemic review, the patient denied experiencing any constitutional symptoms, such as weight change, change in appetite, fever, or night sweats. On physical examination showed enlarged left thyroid swelling that was non-tender, and did not move with swallowing.

His physician ordered thyroid function tests and ultrasound and referred him to general surgery. Laboratory workup and US thyroid followed by FNA then CT neck was ordered.

Before surgery, he was assessed using a scope done by an otorhinolaryngologist which revealed airway was patent, had good chink, and bilateral mobile vocal cords. There was no medialization in his upper airway.

Results

Laboratory findings

Routine blood tests revealed no significant results for freeT3, freeT4, and TSH.

Imaging Examinations

US of the thyroid gland

The thyroid gland appeared enlarged and characterized by heterogeneous nodular parenchymal echotexture. It was noted that there were several bilateral nodules of variable size.

Among the pronounced ones, the most pronounced was at the posterior aspect of the right lobe, which measured about 1.7 x 0.9 cm heterogeneous hypoechoic with small echogenic foci, as seen in TR-4. An extremely prominent heterogeneous hyperechoic component can be seen in the left lobe with multiple peripheral calcifications measuring roughly 4.8 x 2.6 cm, consistent with TR-4.Few enlarged cervical lymph nodes were seen bilaterally, the largest was noted at the right-side measured 1.8 × 0.4 cm as Shown.

Fine needle aspiration (FNA) report.

Papillary thyroid cancer.

CT neck findings:

Heterogeneous enhancement of thyroid gland with small sub centimeter infrathyroid/paratracheal lymph nodes. Minimally prominent, submental, submandibular, along the carotid sheath, posterior triangle and supraclavicular lymph nodes and the largest one measured around 0.5 cm in the left upper jugular lymph node level. There was no enhancing soft tissue or cystic lesions seen within the neck as shown.

Treatment

During the consultation, it was recommended that the patient undergo surgery. As a result, he underwent a total thyroidectomy, left central lymph node dissection, lateral lymph node dissection, and parathyroid implantation in the left sternocleidomastoid muscle the specimen's.

Histopathology of the specimens

The left lobe and isthmus of the thyroid showed papillary carcinoma of the classic subtype, along with chronic lymphocytic (Hashimoto) thyroiditis. The parathyroid glands were unremarkable. As well as the right lobe also revealed papillary carcinoma, classic subtype, and chronic lymphocytic (Hashimoto) thyroiditis. However, the left cervical lymph node excision identified one positive lymph node for carcinoma, measuring 4.5 cm, with no extra-nodal extension.

The patient underwent a total thyroidectomy with multifocal tumor involvement in both the right and left lobes. The tumor sizes were 5 cm in the left lobe and 1.6 cm in the right lobe. No tumor necrosis or lymph vascular invasion were identified; however, perineural invasion was present. There was evidence of extrathyroidal extension, limited to microscopic invasion of the strap muscle. The margin status revealed tumor involvement at the inked resection margin of the left posterior lobe, and the tumor was also located less than 1 mm from the inked margins of the left anterior, right anterior, and right posterior lobes. One regional lymph node was positive for carcinoma.

Outcome and follow-up

Diagnosis was made by ultrasound of the thyroid gland, FNA, and CT of the neck. Post-operation, the patient was stable and did not develop any complications such as hematoma, hoarseness, dysphagia, or aspiration. He presented to the clinic two weeks after the surgery, and the final histopathology result was discussed with him. Following surgery, patients were referred to the endocrinology clinic and followed up regularly in the endocrine surgery clinic. He was also referred to a tertiary center to receive radioactive iodine (I-131), where they provide it.

Discussion

There is a two-fold greater incidence of papillary carcinoma in females than in males [7]. A systematic review and meta-analysis reported that age above 45 year old, male gender, multifocality, tumor size more than 1 cm, , tumor site at the 1/3 upper, capsular invasion, and extra thyroidal extension are all risk factors for lymph node metastasis in PTC [8]. It is estimated that 4 to 7% of the population suffers from palpable thyroid nodules; however, ultrasound is capable of detecting nodules in 67% of patients [9]. As per the revised guidelines published by the American Thyroid Association in 2015, thyroid nodules diagnosed as benign by fine-needle aspiration biopsy (FNAB) do not require further diagnosis or treatment. However, the guidelines are unclear regarding thyroid nodules larger than four centimeters and their risks of malignancy [10]. According to a recent study, fine-needle aspiration biopsy (FNAB) demonstrated higher sensitivity and lower false-negative

rates when testing nodules measuring three or four cm in diameter [11].

In this case, surgery could have been performed as the most commonly used treatment for well-differentiated thyroid carcinoma is thyroidectomy, which is usually followed by radiotherapy and radioiodine ablation if the tumor exceeds 4 cm or has significant lymph node involvement [12].

Conclusion

The case presented in this paper involves a 37-year-old male who was diagnosed with papillary thyroid carcinoma. Additionally, the case illustrates the importance of performing a careful dissection of the lymph nodes and inspecting them microscopically.

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