

Thyroid Tuberculosis Presenting as a Cystic Nodule

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Abstract

Although tuberculosis involves every organ and has a wide range of clinical manifestation, however involvement of the thyroid gland is rare. We report a case of a 25-yr-old female with supraclavicular lymphadenitis that developed nodular swelling of the thyroid and had symptoms and sonographic features mimicking a nodule with a cystic component. The diagnosis was made by using fine needle aspiration (FNA). We conclude that thyroid tuberculosis should be considered in the differential diagnosis of thyroid nodules and that FNA can be the main diagnostic procedure.

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Keywords • Tuberculosis • Thyroid gland • Nodule

Introduction

Thyroid tuberculosis is rare and is found in about 0.1% of cases of tuberculosis, with very few cases reported recently even in Asian countries where tuberculosis shows high prevalence¹⁻⁵. Diagnosis of thyroid tuberculosis is difficult to make prior to biopsy or surgery if its possibility is not appreciated. Histological documentation of typical lesions and/or demonstration of the tubercle bacilli from biopsies or aspirated specimens are required for diagnostic confirmation of active disease in the thyroid tissue.

Here we report a case of nodular form of thyroid tuberculosis that was confirmed by using fine needle aspiration (FNA) procedure.

Case Report

A 25-yr-old woman was referred to the Sina Hospital, of Hamedan University of Medical Sciences, Hamedan, Iran with the history of palpable neck mass for 20 days. She had been diagnosed with right supraclavicular tuberculosis lymphadenitis and received anti-tuberculosis medications consisting of isoniazid, rifampin, pyrazinamide, and ethambutol until referring to the hospital. On physical examination, there was a non tender oval-shaped, bulging mass on the right anterior of the neck presumptively diagnosed as thyroid tuberculosis rather than neoplastic lesion. There were general weakness, easy fatigability and palpitation without any clinical evidences of thyrotoxicosis or hypothyroidism. Chest radiography and white blood cell count were normal and the erythrocyte sedimentation rate was 45 mm/h. Thyroid function tests were within normal range. Ultrasonography showed a cystic mass well-defined, round, heterogeneous, hypoechoic with the size of 4.2x3.3x3.3 cm³ in the right thyroid gland (Fig 1). Fine needle aspiration (FNA) was performed on the thyroid mass and cytological evaluation of

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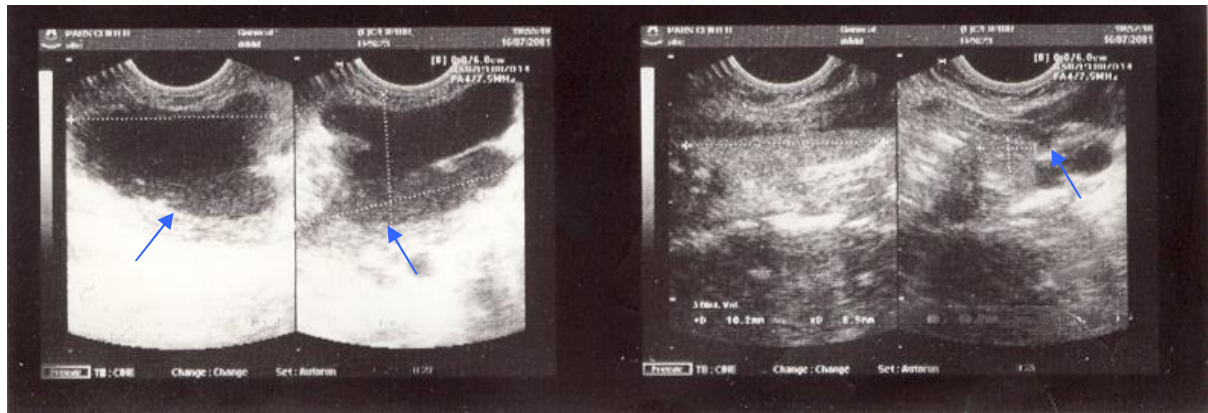


Fig.1: Neck ultrasonography showing a $4.2 \times 3.3 \times 3.3 \text{ cm}^3$ –sized, well defined, heterogeneous, hypoechoic mass in the right thyroid gland.

the aspirated material revealed multinucleated giant cells, histiocytes and lymphocytes. Ziehl-Neelsen staining and culture of the aspirated material were positive for acid-fast bacilli identified as *Mycobacterium tuberculosis*. Thyroid tuberculosis was thus diagnosed. The patient received the standard four drug anti-tuberculosis regimen for six months. Complete recovery was recorded and the follow up has been negative for any recurrence during the last two yrs.

Discussion

The invasion of *Mycobacterium tuberculosis* into the thyroid gland is rare even in the case of patients who have pulmonary tuberculosis, compared to the invasion into other organs. According to the previous records, in 1945, Klassen and Curtis reported that it occurs rarely.⁶ The first case of thyroid tuberculosis was reported in the late 1800s. In the autopsy series of Salvin and associates, 14 of 100 patients had evidence of tuberculosis involving the thyroid gland.⁷ After that, Rankin and Graham reported that they found thyroid gland tuberculosis in 21 cases, which took up 0.1% of the 20,758 thyroid gland excision cases, which they carried out in the Mayo clinic, USA from 1920 to 1931.⁸

In the last decade, a few reports of thyroid tuberculosis have been recorded in spite of increasing frequency of both pulmonary and extrapulmonary tuberculosis throughout the world.^{5, 9-12}

Mycobacteria may spread to thyroid gland hematogenously or from an adjacent focus such as cervical or mediastinal adenitis.^{8,13} However, it is exactly unknown why the morbidity of the thyroid by the bacillus of tuberculosis is so low. In our case, we could not rule out that a tuberculosis adenitis of the supraclavicular region was responsible for the thyroid involvement as a consequence of retrograde diffusion.

Tuberculosis of the thyroid gland appears in various form of a diffuse goiter, soft or hard nodule (painless), mass, thyroiditis (painful swelling), or acute or cold abscess.^{1-6,9-13} Weight loss, night sweating, fever and fatigue are the most common symptoms.^{2,5} Symptoms from pressure effects include dysphagia, dyspnea and disphonia. Disorders of thyroid function are rare.¹³ Enlargement of regional lymph nodes may occur.^{5,10}

Thyroid tuberculosis can also manifest itself as a nodule with a cystic component.¹⁴ Therefore, there are referrals in modern scientific literature stressing that tuberculosis of the thyroid gland should be included in the differential diagnosis of thyroid masses.¹⁵ Diagnosis has to be confirmed by histological findings and / or identification of acid-fast bacilli either on cytological smear or in cultures prepared from biopsy materials. FNA is currently used for the diagnosis of thyroid lesions and may be a good diagnostic tool in the setting of thyroid tuberculosis. Our observations as well as of others,^{5,9,13} confirmed the efficacy and the cost-effectiveness of this approach for thyroid tuberculosis.

In conclusion, although rare, tuberculosis of the thyroid gland should be included in the differential diagnosis of thyroid masses. Fine needle aspiration, AFB staining and culture of the aspirate are important diagnostic tools in these cases.

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