

Thyroid tuberculosis mimicking malignancy: A diagnostic trap in the presence of cervical lymphadenopathy – A case report.

Abstract:

Primary thyroid tuberculosis (TT) is an uncommon disease, and its incidence is low even in countries where tuberculosis is endemic. The high resistance of the thyroid gland to infectious processes may explain this rarity. The coexistence of thyroid tuberculosis and cervical lymphadenopathy can mislead clinicians toward a diagnosis of malignancy.

We present the case of a 37-year-old patient with a right lateral cervical adenopathy that has been evolving for almost 4 months without any clinical signs of tuberculosis or thyroid dysfunction.

A right hemithyroidectomy with adenectomy were performed and the diagnosis is established after histological exam. A 6 to 9 month treatment with antituberculous drugs is administered with a good outcome.

Keywords: thyroid tuberculosis, thyroid mass, FNAC, lymph node

Introduction:

Tubercular involvement of the thyroid body is relatively rare, even in endemic countries. The frequency of thyroid involvement is estimated between 0.1 to 0.4% of all disease sites.[1]

It's most often discovered by chance. The association of lymph node tuberculosis and thyroid tuberculosis presents a diagnostic trap that may lead to unnecessary radical actions especially when the patient does not present any specific signs of tuberculosis.

The aim of our article is to report a new case of this localization and to discuss the diagnostic and therapeutic modalities.

Case report:

A 37-year-old patient with no significant past medical history presented with a painless right cervical mass that had appeared for almost 4 months. There was no complaint of dysphagia or dyspnea. The patient did not present any history of fever, night sweats, weight loss, cough or hemoptysis. There was no past or family history of tuberculosis and no recent TB exposure.

On clinical examination, the patient was afebrile and in a good general condition. A cervical mass associated to a right thyroid lobe swelling but no signs of inflammation were found.

The other lymph node areas were free, and the other systemic examinations did not show any abnormalities.

Thyroid function tests were within normal limits. Ultrasonography of the neck revealed a nodular lesion involving most of the right lobe of thyroid, which was heterogeneous with hypoechoic areas. The FNAC findings have shown a Bethesda category III, which means "atypia of undetermined significance" (AUS) and "follicular lesion of undetermined significance" (FLUS).

A malignant thyroid nodule was suspected.

Given the indeterminate cytology and suspicion of malignancy the patient had undergone a right isthmus-lobectomy combined with cervical lymph node dissection. Histopathological examination was in favor of a thyroid tuberculosis with lymph node tuberculosis.

The patient was put on quadruple anti-tuberculosis treatment (isoniazid, rifampicin, streptomycin and pyrazinamide) for 2 months, followed by dual therapy (isoniazid and rifampicin) for 6 months with good evolution.

At 9-month follow-up, there was no cervical mass either on clinical examination or on ultrasound.

Discussion:

Tuberculosis is a major public-health problem worldwide despite the measures implemented for its prevention. Thyroid gland involvement by Koch's bacillus is an extremely rare condition and the number of cases reported in recent years is very low, even in countries with high tuberculosis prevalence.[2]

Bruns et al, reported the first case of primary thyroid infection in 1893. It presented as a rapidly enlarging goiter with cervical adenopathy without any

evidence of pulmonary tuberculosis. Since then, only few cases have been reported in literature.[3]

The exact incidence of thyroid tuberculosis is lacking, varying from 0.1 to 0.6 % of all tuberculosis sites. The tuberculostatic role of thyroid hormones, the good oxygenation of the thyroid parenchyma, the vascular supply and the high iodine concentration may explain the rarity of this disease.[1], [2]

Mycobacterium Tuberculosis can directly affect the gland (primary infection) or it can seed the gland from other infected organs by hematogenous route (secondary infection), usually mediastinal, paratracheal, or cervical adenopathies, including nodal involvement of the thyroid isthmus, such as the case of our patient.[4]

Tuberculosis of the thyroid can touch all ages, especially young adults between 20 and 50 years old. The female sex is affected by 70 to 80% because of the frequency of thyroid disease in women.[3], [5]

The clinical presentation is unspecific and may consist of diffuse goiter with abundant caseous necrosis, a solitary thyroid nodule, the widespread involvement in the setting of miliary tuberculosis, diffuse fibrosis, an acute abscess or cold abscess. It can also mimic thyroid malignancy as patient may have dysphagia, dysphonia and laryngeal nerve paralysis, or when he presents a cervical adenopathy. [6]

The constitutional symptoms of tuberculosis such as fever, weight loss, night sweats, and anorexia may be present. The thyroid function remains generally normal, but some cases of hyperthyroidism or hypothyroidism were reported. In fact, thyrotoxicosis may occur in early stages because of thyroid cells destruction and the release of thyroid hormones into the circulation. The occurrence of hypothyroidism is explained by extensive glandular destruction by caseous necrosis.[6]

Ultrasound findings are most of the time unspecific, showing a diffuse or multinodular goiter, and in some cases, nodules can mimic a carcinoma. An abscess is anechoic and may show internal echoes. [6], [7]

FNAC is a useful diagnostic tool as it provides material for bacteriologic and cytological analysis; it can confirm the presence of TB in the thyroid, through collecting material for bacilloscopy and culture. Polymerase chain reaction analysis to detect DNA of Mycobacterium tuberculosis can be done in the cytology material. [8]

In our case FNAC was inconclusive so the surgery was inevitable, as the condition mimics thyroid malignancy. The histological examination of TB shows multinucleate giant cells with lymphocytic infiltration and typical granulomas that confirms the diagnosis.[9]

Treatment options for thyroid tuberculosis consist on antituberculous drugs and/or surgery. This modality is considered as first-line treatment method as it has been seen that appropriate treatment duration (from 6 to 9 months) may lead to complete resolution of the infection. Surgical drainage is only indicated in case of a large abscess. [9]

Conclusion:

Tuberculosis of the thyroid gland should be kept in mind while managing a patient with a thyroid nodule and its association with cervical adenopathy requires a high clinical suspicion as it can mimick a tumor.

Current modalities may allow for specific, minimally invasive diagnosis, and chemotherapeutic drugs represent a safe and effective management option.

This case of tuberculosis involvement of the thyroid gland was challenging to diagnose due to the rarity of the disease and the atypical clinical presentation and lack of tuberculosis symptoms.

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