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Review article

Synchronous Papillary Thyroid Cancer and Lymph Node Tuberculosis in a Patient with Cervical Lymphadenopathy: Case Report and Review

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Abstract

The incidence of thyroid cancer has increased in the last decade, with a mortality rate of 0.5 per 100,000 inhabitants, being papillary carcinoma as the most common histological type. Identify it synchronously with a case of lymph node tuberculosis (TBG) is extremely rare and a real challenge for its diagnostic suspicion. Tuberculous lymphadenitis is clinically indistinguishable from metastatic forms of papillary thyroid carcinoma and histopathologic examination is the most accurate test for diagnosis. In this paper we present the case of a 31-year-old male who presented cervical lymphadenopathy and a concomitant thyroid nodule, giving the impression of a metastatic thyroid tumor, who received treatment with total thyroidectomy and cervical lymph node dissection.

Keywords: ***Thyroid cancer, tuberculosis, extrapulmonary tuberculosis, papillary cancer, cervical lymphadenopathy.***

Introduction

Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis or Koch's bacillus, generally located in the lungs [1]. According to data from the World Health Organization (WHO), 1.5 million people died from tuberculosis in 2020 (between including 214,000 people with human immunodeficiency virus (HIV) infection Worldwide. Tuberculosis is the thirteenth leading cause of death and the deadliest infectious disease behind COVID-19 [2]. In Mexico, tuberculosis remains an important health problem with high incidence in some states of the republic [3], predominantly areas with limited economic resources.

Between 15 and 20% of all cases of tuberculosis will present extrapulmonary location, the most frequent being pleural tuberculosis (PTB) and lymph node tuberculosis (LNTB) [3,4]. Tuberculous lymphadenitis is usually indistinguishable from metastatic forms of papillary thyroid carcinoma (PTC) from its distribution and macroscopic appearance of the nodes; cervical lymphadenopathy has been found as the initial presentation in 23-56% of PTC5 cases.

Materials and Methods

Clinical case

It corresponds to a 31-year-old male, originally from the coast of the Gulf of Mexico and resident of Mexico City, an internist by profession, with no comorbidities. He started 3 months ago with a right cervical adenopathy without other clinical manifestations; he ingested NSAID for 2 weeks without changes in the morphology of the node. He went to the doctor's office where the physical examination identified multiple bilateral cervical adenopathies of approximately 1-2 cm in diameter, rounded, mobile, not painful on palpation, on both sides of the neck. An ultrasound of the neck was performed, reporting a thyroid nodule in the left lobe TI-RADS 5. With heterogeneous echogenicity secondary to an image of heterogeneous composition, predominantly hypoechoic, ovoid, circumscribed, with peripheral and central color Doppler signal, with echogenic images in its interior, in relation to calcifications, with dimensions of 1.89 x 1.7 cm, as well as the presence of a left supraclavicular lymph node conglomerate with probably infiltrative characteristics in addition to bilateral multilevel adenopathies (**Figure 1**).

Results and Discussion

LNTB is the most common clinical presentation of extrapulmonary tuberculosis, with only a history of tuberculosis contact in 21.8% and tuberculosis infection in 16.1% of cases of tuberculous lymphadenitis [6,7].

The typical presentation of cervical tuberculous lymphadenitis is unilateral or multiple painless masses that are usually found in supraclavicular areas or near the posterior triangle of the neck [7,8]. These characteristics are a compatible and relatively frequent manifestation in patients with aggressive thyroid neoplasms that present with early lymph node invasion [9]. Sonographically, the findings of tuberculous lymphadenitis are very similar to those presented by PTC, within which found hypoechoic nodules with the presence of intranodal cystic necrosis and calcifications similar to metastatic nodules by PTC [10].

The synchronous presence of PTC and tuberculous lymphadenitis has been described in several case reports from India, Korea, Japan, United States and the Philippines. In most reports they were diagnosed with tuberculous lymphadenitis after initial consideration of PTC metastases [10-13]. Our patient initially presented asymptomatic with gradually growing of the right cervical lymph nodes. Due to the malignancy documented by the previous BAAF, the proximity of the lymph nodes, the absence of clinical history for infectious diseases and the laboratory tests in normal ranges, our main consideration for lymphadenopathy was metastatic spread.

Ultrasound, although it is a sensitive diagnostic method, as already mentioned above, it is difficult to determine the real etiology of lymphadenopathy between PTC metastasis and cervical tuberculous lymphadenitis. Similarly, current guidelines do not recommend routine preoperative FNAB of lymph nodes in PTC, so without a high index of suspicion it can be easily missed. Histopathological examination remains the most accurate test for diagnosis, however, preoperative BAAF has a sensitivity of 46-90%. Similarly, polymerase chain reaction (PCR) of the aspirate can be used to increase sensitivity and specificity [14,15].

Considering the high prevalence of TB in our country, it is important to have a high index of suspicion, because in retrospect, a rapid study of TB in our patient could have identified the disease before surgery, leading an early antimicrobial treatment, avoiding the morbidity associated with neck lymph node dissection.

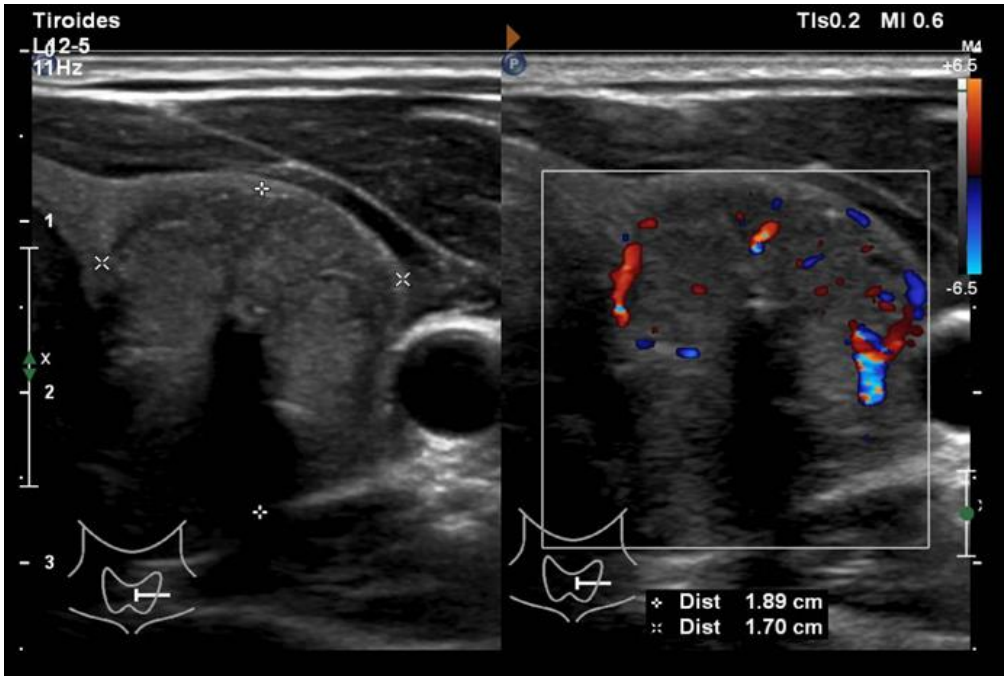

Figure 1: Thyroid USG. TI-RADS 5 thyroid nodule with dimensions of 1.89 x 1.70 cm is observed.

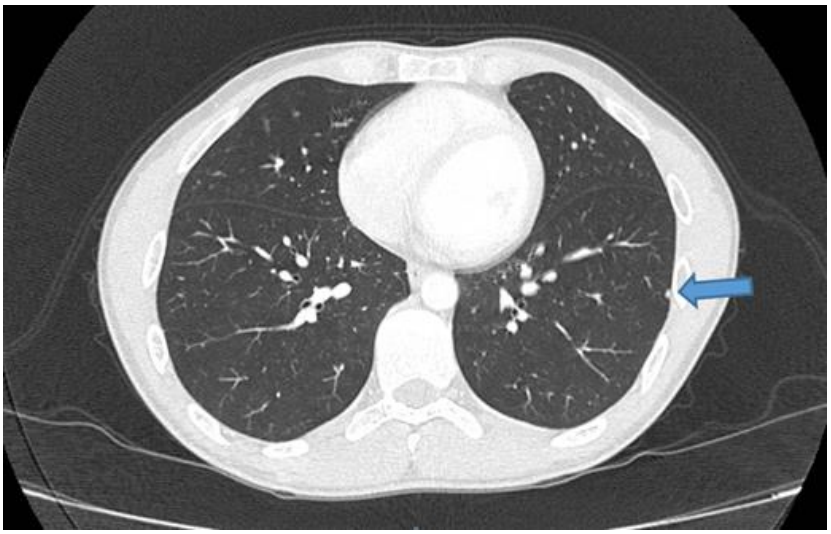

Figure 2: Lung CT. Left lung, blue arrow, subpleural punctate nodule in the upper segment of the lower lobe of approximately 2 mm, probably related to metastatic activity.

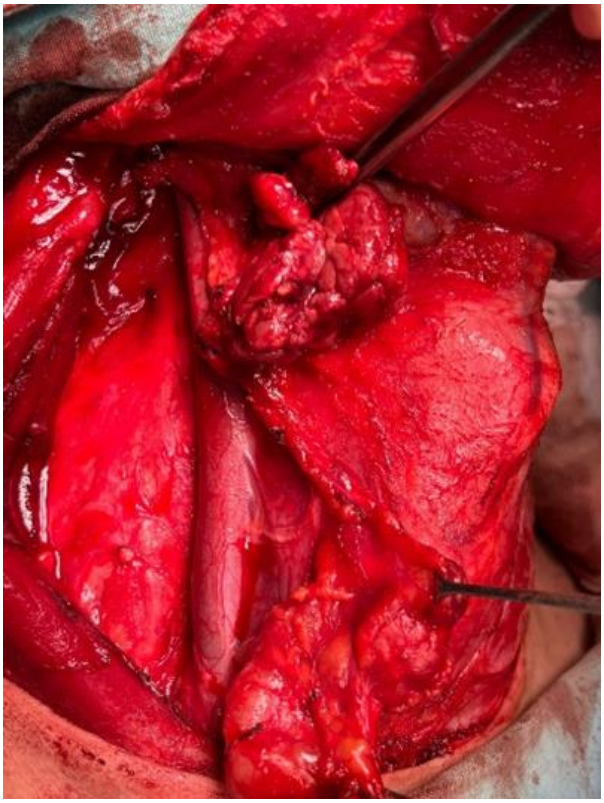

Figure 3: Complete exposition of right neck dissection.

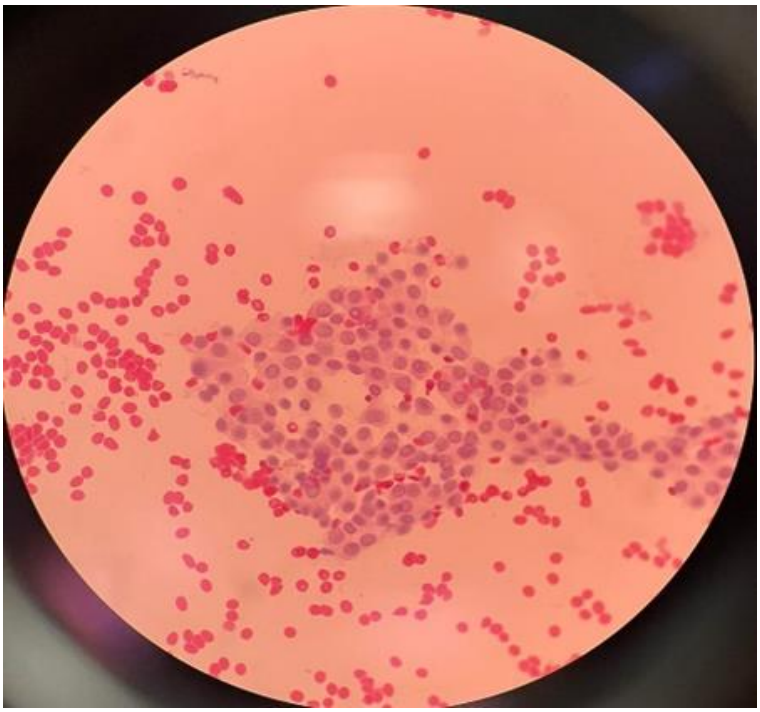

Figure 4: Slide. Nuclei of cells with scattered chromatin are observed, producing a clear or empty optical appearance (nucleus with eye of orphan Annie). As well as Psamoma bodies and intranuclear cytoplasmic inclusions.

Conclusions

The association of PTC and tuberculous lymphadenitis is not uncommon in developing countries. Cervical lymphadenopathy in a patient with a PTC does not always indicate metastatic spread of the disease, LNTB should be considered as a differential diagnosis, especially in populations at risk. A complete preoperative evaluation and an appropriate clinical history are cornerstones to provide adequate and timely treatment, to avoid the morbidity of extensive and aggressive surgery such as cervical dissection.

Ethics approval and consent to participate

"Not applicable".

List of abbreviations

LNTB: Lymph nodes tuberculosis
TB: Tuberculosis
TSH: Thyroid-stimulating hormone
T4: Free thyroxine

T3: Free triiodothyronine) 3.33 ng/dL,
CT: Contrasted tomography

Data Availability

"Not applicable".

Conflicts of Interest

"The authors declares that there is no conflict of interest regarding the publication of this paper."

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Authors' contributions

JAV: Compiled the patient's data and provided outpatient and postoperative follow-up.
MAM: You performed the surgery in the case presented here.
LAB: Revised the article, organized the format for editorial and sent the work to the journal.

All authors read and approved the final manuscript.

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