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Original Research Paper ENT

"TUBERCULOUS THYROIDITIS: A RARE CASE REPORT"

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ABSTRACT

Tuberculosis of thyroid gland is a rare entity even in countries with high prevalence of tuberculosis. The diagnosis of extra-pulmonary tuberculosis, especially in the rare sites like thyroid, pancreas, striated and cardiac muscles is difficult. Thyroid tuberculosis, if at all present, is more commonly associated with either miliary or disseminated tuberculosis or with contagious involvement from adjacent viscera and vertebral body. Hence, for an accurate diagnosis of thyroid tuberculosis, pathological examination with demonstration of acid-fast bacilli is important along with a proper clinico-radiological evaluation.

Herein we report a case of 30-year-old male with swelling on the right side of neck who presented with a "solitary thyroid nodule" on ultrasound and "colloid" in fine needle aspiration cytology (FNAC) with scattered epithelioid like cells along with benign follicular epithelial cells. However, no definitive diagnosis could be given on cytology due to pauci-cellularity.

Tuberculous thyroiditis was diagnosed on histopathology since the patient underwent right hemithyroidectomy for right side solitary nodule. The patient was started on Anti-tubercular therapy (ATT) and had no complications in 6 months follow up period.

Although rare, thyroid tuberculosis should be kept in mind in differential diagnosis of thyroid nodules, even in patients with no history and symptoms of TB disease elsewhere specially in TB endemic areas.

KEYWORDS : Thyroid, tuberculosis, thyroiditis, hemithyroidectomy, caseous necrosis, AFB

INTRODUCTION:

TB of thyroid gland is extremely uncommon. Its incidence according to literature is 0.1 % - 0.4 %.[1-3] Although TB is reported in many parts of the human body, thyroid involvement is rare, probably because of bactericidal action of colloid material of thyroid gland, iodine stores, high vascularity, increased phagocytic activity in hyperthyroidism and possibly antitubercular action of thyroid hormones.[2-4]

TB may affect thyroid gland via hematogenous or lymphogenous route or by direct invasion from larynx or cervical lymph nodes. The other less common mode of spread is secondary to a disseminated form of TB. TB thyroiditis may present as solitary thyroid nodule, cold abscess, acute thyroiditis or secondary to miliary TB presenting with multiple sinuses. Thus, suspecting thyroid tuberculosis clinically is always difficult. Here, we present a case tuberculous of thyroid gland in an adult male which was diagnosed on histopathology. The patient was started on ATT and was doing well till the last follow up.

CASE REPORT:

A 30-year-old male presented with complaints of thyroid swelling on the right side of neck for the last 3 years which was gradually increasing in size with no compressive or any associated symptoms. There was no history of any obstructive symptoms. No history of chronic cough, fever or weight loss can be elicited. There was no previous history of TB exposure, diabetes mellitus or hypertension.

On examination he had a 3x3 cm swelling which was non tender, firm in consistency, moved with deglutition with no palpable lymph node [Figure1A]. The systemic examination was unremarkable, and he was clinically euthyroid. The basic blood investigations and routine biochemistry were within normal limits. His initial work up included FNAC of thyroid lobe which showed colloid with few scattered epithelioid cells, however no well-defined granuloma or necrosis could be elicited in the smears examined. Ultrasound of thyroid showed a right sided hypoechoic nodule measuring 3x3 cm with minimal peripheral vascularity. The left lobe was normal in size. Chest X- ray was within normal limit.

Right hemithyroidectomy was hence planned on the basis of above findings. Intraoperatively a firm enlarged thyroid was palpable on the right side and hemithyroidectomy was done and specimen was sent for histopathological examination. No other complications were noted intra and post operatively.

Histopathological examination showed follicles of varying sizes filled with colloid and exclusive lymphoid aggregation with formation of granulomas with presence of giant cells and an area of caseous necrosis confirming tuberculosis {Figure1B-C]. Section from isthmus was unremarkable. Also stain from AFB was positive {Figure C, inset]. The patient was started on Antitubercular therapy. The patient had no significant complications in 6 months follow up period.

DISCUSSION:

Thyroid TB may present clinically with a broad spectrum of manifestations, ranging from an isolated nodule to frank hyperthyroidism.[1-3] The patient may also present with thyroiditis, thyroid abscess or pyrexia of unknown origin or even mimic thyroid malignancy with dysphagia, dysphonia, or laryngeal nerve palsy.

Thyroid TB presents a diagnostic dilemma. Thyroid TB is not usually investigated because of its rare occurrence.[2-4] On standard blood investigations majority of the patients are euthyroid. Elevated ESR favors the diagnosis of thyroiditis though is not elevated in most cases.

A history of TB concomitant with cervical lymphadenopathy may lead to correct clinical diagnosis. If mycobacterial

infection is suspected, chest x ray with tuberculin skin test (PPD) should be performed. A Mantoux may be done to evaluate for TB thyroiditis as one of the differential diagnosis.[4-6] However, since high index of suspicion is required for TB thyroiditis as differential, hence demonstration of acid-fast bacilli is not always possible.

FNAC mostly diagnoses the condition, demonstrating the presence of caseous necrosis. When it is cheesy or pus like, aspirated material should be cultured for mycobacteria. There are instances where FNAC is unable to demonstrate the presence of AFB, as in our case and hence a definitive diagnosis is required. USG generally shows a picture similar to that of nodular goiter or isolated collection suggesting of cold abscess. The definitive diagnosis is done with histopathological evaluation showing epitheloid granulomas, giant cells or caseous necrosis.[3-6]

Many diseases may cause granulomatous inflammation in thyroid like granulomatous thyroiditis, palpation thyroiditis, fungal infection, TB, sarcoidosis, granulomatous vasculitis and foreign body reaction.[4-6] However, caseous necrosis is seen only in TB inflammation. In a case of TB abscess, drainage of abscess followed by ATT is considered as sufficient and further surgery is rarely required.

Surgical removal of gland is necessary when there is evidence of nodular goitre or preoperative diagnosis is suggestive of a more similar etiology. If the preoperative diagnosis itself is confirmatory of TB, one can proceed with ATT alone which has shown to provide good patient outcomes and avoidance of unnecessary surgery.[5-6] ATT is effective because of high vascularity of gland.

Figures with Legends:

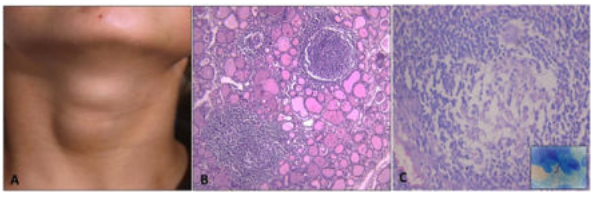

Figure 1: A- Clinical image showing a solitary thyroid nodule on the right side of neck; B-Section from thyroid showing multiple, variably sized thyroid follicles along with numerous lymphoid aggregates [B, H&E- 20X]; C- High power showing lymphoid follicles with scattered epithelioid cells, focal necrosis, occasional multinucleated giant cells [C, H&E- 40X]; Inset [Figure 1C] showing ZN stain positivity for acid fast bacilli [Inset, 100X].

CONCLUSION:

TB thyroiditis is rare but should be considered as differential diagnosis of thyroid masses especially in countries like India where the disease is endemic. A history of TB elsewhere in the body or presence of cervical lymphadenopathy and high ESR values may help in the diagnosis but thyroid TB can occur even in absence of these features. Due to a multitude of presentations, coming to a diagnosis of TB thyroiditis remains a challenge with the diagnosis hanging on FNAC and histopathology. The treatment is mainly ATT, though surgery is necessary in cases presenting as goitre where preoperative diagnosis with FNAC is suggestive of other etiologies and later confirmed on histopathology.

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