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Case Report

Pathology Section

Tubercular Thyroiditis as a Part of Disseminated Tuberculosis in a Young Male: A Rare Clinical Presentation

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ABSTRACT

Thyroid tuberculosis is uncommon even in countries like India where prevalence of tuberculosis is high. Bactericidal actions of colloid, excess iodine stores and high vascularity of the gland have been implicated for the very rare occurrence of thyroid tuberculosis. We present a case of a 16-year-old male with thyroid involvement as a part of disseminated tuberculosis. The clinical presentation of thyroid tuberculosis is varied and may be missed if not kept in the differential diagnosis of goitre. This case also highlights the role of fine needle aspiration cytology in management of goitre. It is an important diagnostic test as it avoids unnecessary surgical intervention.

Keywords: Fine needle aspiration cytology, Goitre, Lymphadenopathy

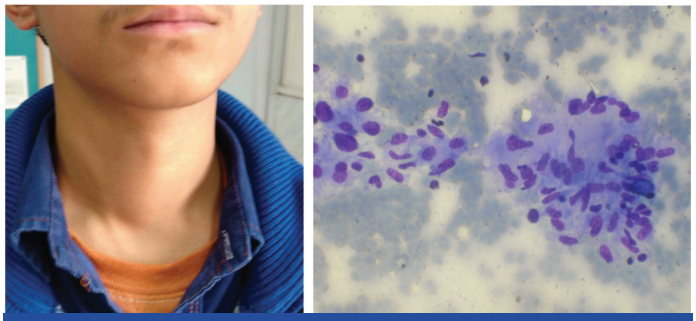
CASE REPORT

A 16-year-old male presented with a history of low grade fever and significant weight loss for the past three months. He noticed a midline swelling for the past one month, which moved on deglutination. Clinically he had no signs and symptoms of hypothyroidism or hyperthyroidism. His past history was insignificant.

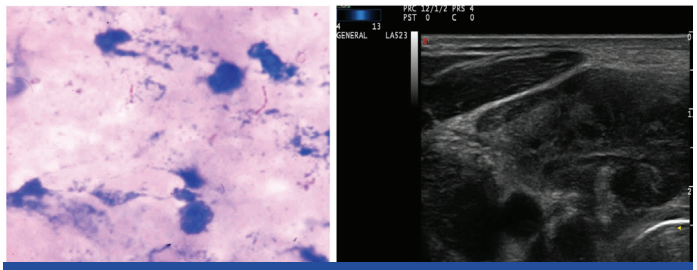
On physical examination, the swelling measured 4 x 3 cm and was firm in consistency [Table/Fig-1]. No cervical lymph nodes were palpable. The blood counts revealed anaemia with a haemoglobin level of 9.3 gm/dl, haematocrit – 28.9%, Mean Corpuscular Volume– 64.3 fl, Mean Corpuscular Haemoglobin– 20.6 pg/cell, Mean Corpuscular Haemoglobin Concentration– 32.1 gm/dl. Erythrocyte Sedimentation Rate (ESR) was elevated and measured 60-mm/hr. Monteux Test was negative. The thyroid function tests and other routine biochemistry were normal.

It is our practice to perform Fine Needle Aspiration Cytology (FNAC) for all neck swellings. The FNAC of the thyroid swelling showed epithelioid cell granulomas in a background of cellular debris and caseous necrosis. Occasional follicular cells were also seen [Table/Fig-2]. The Ziehl Neelsen (ZN) stain showed acid-fast bacilli [Table/Fig-3]. Hence, a diagnosis of tubercular thyroiditis was made. The TB–PCR was positive which further substantiated the diagnosis.

Further work up of the patient revealed mild right-sided pleural effusion on chest X-Ray. The rest of the lung fields and left costophrenic angles were clear. The sputum was negative for acid-fast bacilli. The Ultrasonography of thyroid showed enlarged right lobe of the thyroid with heterogeneous echo texture along with multiple linear bright echoes throughout the hypoechoic parenchyma giving the appearance of coarse septation [Table/Fig-4]. The left lobe showed sub centimetre colloid nodule. In addition, multiple bilateral cervical lymph nodes were seen at the levels III and IV with largest measuring 14 mm. Few paratracheal and perivascular lymph nodes were also seen. However, none of the lymph nodes were palpable clinically. The ultrasound of abdomen showed mild hepatosplenomegaly with mild ascites, multiple discrete and conglomerate mesenteric and retroperitoneal lymph nodes with largest measuring 1.6 x 1.1 cm. In view of long standing fever with weight loss, generalised lymphadenopathy, hepatosplenomegaly with ascites, pleural effusion and Grade II goitre, a diagnosis of disseminated tuberculosis was made. Hence, this case is a rare example of thyroid involvement as a part of generalised dissemination. The patient was referred to



[Table/Fig-1]: Image of the midline thyroid swelling, which moved in deglutination and was firm in consistency. **[Table/Fig-2]:** Microphotograph showing epithelioid cell granulomas and occasional follicular cells. (Leishman Giemsa, 40X).



[Table/Fig-3]: Microphotograph showing acid-fast bacilli. (Ziehl Neelsen stain, 100X). **[Table/Fig-4]:** Ultrasound image of the thyroid showing enlarged right lobe with heterogeneous echo texture.

National Institute of tuberculosis and respiratory diseases, where he was put on anti tubercular treatment. The patient is responding well to the treatment and his neck swelling is regressing.

DISCUSSION

The thyroid tuberculosis is uncommon even in countries like ours where prevalence of tuberculosis is high, with its frequency in resected thyroidectomy specimens reported as 0.1 -0.4% [1,2].

Bactericidal actions of colloid, excess iodine stores and high vascularity of the gland have been implicated for the very rare occurrence of thyroid tuberculosis [3].

Tubercular involvement of the thyroid may be either primary or a part of disseminated disease process (pulmonary/extra pulmonary). The spread can be direct (from the adjacent focus or seeding of the gland during haematogenous dissemination. The pathological varieties described are: multiple lesions in association with the miliary

tuberculosis, goitre with caseation, cold abscess formation, chronic fibrosing tuberculosis and acute abscess [3,4]. The tubercular thyroiditis can be challenging diagnosis because there is no specific symptom for this entity. The clinical presentation ranges from asymptomatic to either solitary nodule or multinodular goitre. The presence of lymphadenopathy may suggest a thyroid neoplasm. It may present with pyrexia of unknown origin [4].

Thyroid tuberculosis should be differentiated from all the thyroid disease presenting as thyroid nodule. The differential diagnosis of tubercular thyroiditis depends on the presence or absence of local pain. If pain is the predominant clinical finding, then the differential diagnosis includes an infectious form of thyroiditis and sub acute granulomatous thyroiditis [5-7].

Many diseases like granulomatous thyroiditis, palpation thyroiditis, fungal infection, tuberculosis, sarcoidosis, and foreign body reaction may result in granulomatous inflammation of thyroid. However, the presence of caseation necrosis distinguishes tubercular thyroiditis from other causes of granulomatous thyroiditis. In cases where pain is absent, thyroid malignancy should be included in the differential diagnosis. There are few reports of tubercular thyroiditis coexisting with a thyroid carcinoma [6-8].

Most cases of the thyroid tuberculosis are euthyroid. However, cases of both hypothyroidism and hyperthyroidism have been reported [5,7-10].

A raised ESR and Monteux may point towards the possibility of thyroid tuberculosis. FNAC is an important diagnostic method as it is a simple, rapid and an inexpensive technique. It avoids unnecessary thyroid surgeries. The FNAC material may be subjected to ZN staining, culture and polymerase chain reaction for confirming the diagnosis, if there is suggestion of tuberculosis in the form of caseous necrosis and epithelioid cell granulomas [10].

Our case illustrates a rare presentation of thyroid tuberculosis as a part of disseminated disease. Our institute, as a referral centre for thyroid disease gets 700-800 cases per year. On retrospective analysis of all the records for the past three years, only one case of thyroid tuberculosis has been diagnosed (1 in 2300 cases). It implies that thyroid tuberculosis is rare even in countries like ours, which has a high prevalence of tuberculosis.

CONCLUSION

Thyroid tuberculosis must be kept in differential diagnosis of a thyroid swelling. FNAC is an important diagnostic test, as it avoids unnecessary surgical intervention, as the mainstay of the treatment is medical.

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