Case Report

An interesting case of tuberculosis of the thyroid gland

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ABSTRACT

Tuberculosis has been reported in many parts of the human body but thyroid gland involvement is extremely rare and its true incidence is still unknown. Tuberculosis of the thyroid is a rare entity even in countries where tuberculosis is prevalent as an endemic problem. Tuberculosis of thyroid gland can present as cold abscess, multinodular goitre, acute abscess or generalized goitre. Clinically, these patients can be euthyroid, hypothyroid or hyperthyroid. Here we report an unusual presentation of recurrent neck swelling in an 8 year old girl turning out to be tuberculosis of thyroid gland.

Keywords: Neck swellings, MGIT, Thyroid gland, Tuberculosis, SHREZ

INTRODUCTION

Tuberculosis (TB) is considered a public-health problem despite the measures implemented for its prevention. Tuberculosis has been reported in many parts of the human body but thyroid gland involvement is extremely rare and its true incidence is still unknown. Bruns et al., in 1863 reported the first case of tuberculosis of thyroid. Since then, fewer cases has been described, most of them in post-mortem studies.¹

The exact incidence of Thyroid Tuberculosis (TTB) varies from 0.2% in chronic thyroiditis to 7% in miliary tuberculosis.

This rarity of occurrence has been attributed to bactericidal property of colloid, high vascularity, iodine excess and possible role of thyroid hormones.² It is unlikely to suspect a thyroid swelling or nodule as being tuberculous on clinical examination unless it has destroyed the gland and formed an abscess in a patient with known pulmonary tuberculosis. Histopathologically, TTB presents as granulomas composed of epithelioid

histiocytes and Langhan's giant cells with central caseation necrosis surrounded by lymphocytes peripherally.³

CASE REPORT

An 8 year old female presented with painless swelling in left side of neck of 3 months duration. The patient had history of recurrent swelling at the same site in past and with a diagnosis of recurrent abscess she had underwent incision and drainage yearly once for past 3 years at various clinics. Local examination revealed a puckered surgical scar in the antero-lateral aspect of left side of neck and a swelling around it of size 3x4cm firm in consistency, non-tender, non-fluctuant, non-compressible and with no signs of acute inflammation. The rest of her physical examination was unremarkable, as were vital signs and basic laboratory values. Mantoux test was negative, ESR was slightly raised and CRP was normal. Ultrasonogram of the neck showed an ill-defined hypoechoic foci of size 3x2cm involving left inferior thyroid lobe with surrounding inflammatory thickening and rest of thyroid gland was normal as in Figure 1-

suggestive of thyroid abscess. Fine needle aspiration cytology (FNAC) was done which showed chronic non-specific inflammatory cells.

Figure 1: USG of the neck showing an ill-defined hypoechoic foci of size 3x2cm involving left inferior thyroid lobe.

Ultrasonogram guided wide bore aspiration was done and failed with scanty material. Hence, abscess site was preoperatively marked and focal neck exploration was done under general anesthesia. With a 2.5cm incision, deep cervical fascia was opened and on splitting the strap muscles around 20ml of caseating pus drained from the inferior left lobe of thyroid gland. Thorough wash was given and drain placed. Post-operative period was uneventful, drain removed on POD-2 and discharged with a dressing. Caseating pus and debris from the thyroid gland was sent for biochemical and pathological study. Mycobacteria growth indicator tube (MGIT) revealed the presence of acid fast bacilli (AFB) and histopathological examination of the specimen showed areas of caseation necrosis, inflammation with Langhan's type giant cells consistent with tuberculosis. SHREZ (Streptomycin, isonicotinyl Hydrazine, Rifampicin, Ethambutol, pyrazinamide) sensitivity test was done subsequently and no resistance noted. Patient was started on anti-tuberculous therapy (ATT) and continued for duration of 9 months. Patient improved well with complete regression of symptoms as shown in Figure 2.

Figure 2: Post operative scar on 1 year follow-up and at completion of anti-tuberculous therapy (ATT).

Follow up scans was done at 6 months, 1-year and at 2years which showed no abnormality.

DISCUSSION

TTB may be primary or secondary. Primary or isolated TTB is infection of the thyroid gland with no evidence of tuberculosis elsewhere in the body. Primary TTB is very uncommon and more difficult to explain. Secondary TTB may be the result of hematogenous spread to thyroid gland or by direct extension from an active laryngeal or cervical lymph node focus.³ Five different clinical presentations have been described: goiter with caseation, cold abscess formation, acute abscess, military tuberculosis, and chronic fibrosing tuberculosis.⁴ The patient may present with fever of unknown origin. It can also mimic thyroid malignancy as patient may have dysphagia, dysphonia and laryngeal nerve palsy.⁵ Diagnosis can be made from FNAC with staining for AFB or culture of the aspirated material. The characteristic histological features include caseous necrosis, necrotizing epithelioid granuloma, and Langhan's type giant cells. Demonstration of acid fast bacilli by Ziehl-Nielsen staining confirms the diagnosis but it is often negative in tissue section.⁶ Isolation of AFB in mycobacteria growth indicator tube (MGIT) and checking for SHREZ sensitivity test in suspected and recurrent cases is often helpful. DeQuervain's thyroiditis may have similar histopathological features with thyroid tuberculosis but caseous necrosis is absent.⁷ Treatment with quadruple anti-tuberculous therapy (rifampicin, isoniazid, pyrazinamide and ethambutol) has been shown to result in full resolution of thyroid TB in majority of cases, although adjunctive drainage of abscesses can be useful.

It is therefore important to identify the correct diagnosis to avoid unnecessary surgery which may be performed when thyroid TB is mistaken for malignancy. Resolution is usually complete with medical treatment alone, although occasionally surgery or drainage are necessary adjuncts.⁸

CONCLUSION

Extrapulmonary tuberculosis presents a diagnostic dilemma because of the relative infrequency of occurrence at certain sites including thyroid gland. A possible differential diagnosis of thyroid tuberculosis should be borne in mind while treating patients with atypical thyroid swellings. Ultrasound guided FNAC is a useful diagnostic method as it helps to avoid unnecessary surgery. Isolation of AFB in Mycobacteria growth indicator tube (MGIT) and checking for SHREZ sensitivity test in suspected and recurrent cases is often helpful.

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