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THYROID TUBERCULOSIS: A REVIEW ARTICLE

Surgery

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ABSTRACT

Thyroid tuberculosis although known to be a rare entity provides a diagnostic challenge to the clinician. Clinically, radiologically and even histologically proving to be difficult to arrive at a diagnosis. This article aims to summarize the efforts of multiple individuals having encountered such cases in their clinical practise and come to a consensus regarding the diagnostic and treatment hurdles one may face.

In any case of thyroid swelling, FNAC seems to be the most important diagnostic modality though it doesn't always prove to be accurate. If so confirmed standard ATT will suffice reducing the need for unnecessary surgery. In cases where surgery is indicated(be it abscess drainage or thyroidectomy) histopathology provides the undisputable diagnosis. Newer modalities like gene Xpert must also be tried in future when the diagnosis is in doubt.

KEYWORDS

Introduction:

Isolated thyroid tuberculosis is a rare entity even in settings where the prevalence of tuberculosis is high. The diagnosis is made even more difficult by the fact that it can present as an abscess ,a diffuse swelling or a solitary nodule. Due to this myriad of presentations , a thorough work up of the patient including radiological and histological diagnosis is essential.

The first case of tubercular involvement of the thyroid gland was made by Lebert in 1862, in a case of disseminated tuberculosis[1]. From its inception misdiagnosis of this condition has been common and even mistaken for malignancy.[2]Since 1952, two studies involving fine needle aspiration cytology (FNAC) were conducted and lesions compatible with thyroid tuberculosis were found in 8 out of 1283 and in 18 out of 1565 cases, respectively.[3,4] The exact number of cases reported is difficult to determine, but to our knowledge at least 186 cases can be found cumulatively in the English language literature, four of which were children. According to literature the frequency of tuberculosis in thyroid is 0.1%-0.4% in histologically diagnosed specimens[1]. Similarly, the true incidence of tuberculous thyroiditis is difficult to estimate possibly due to escape of the etiologic diagnosis.[5]

Etiopathogenesis:

Tuberculosis may affect the thyroid gland via either the haematogenous or the lymphogenous route or by direct invasion from the larynx or cervical lymph nodes.[6] Yet, there are many reported cases in the literature with isolated thyroid tuberculosis with no evidence of enlarged nodes or other foci of infection. The other less common mode of spread is secondary to a disseminated form of tuberculosis. The low incidence of thyroid TB(isolated or part of disseminated disease) can be attributed to the bactericidal action of the colloid, high vascularity and high iodine content of the gland.[2]

Clinical Presentation:

Tuberculous thyroiditis may present as one of the following:-

1.Acute thyroiditis- The patient usually presents with a neck swelling gradually increasing in size,or an abscess collection. The swelling maybe painful and tender The patient can present with fever, weight loss and lymphadenopathy.[7]

2.Solitary nodule thyroid /Diffuse thyroid swelling/cold abscess- The patient presents with a neck swelling with generally no other obstructive complaints. Other classical features such as loss of weight /appetite /evening rise of temperature are generally not present.

3. Apart from such a presentation, tuberculous thyroiditis may follow a subacute course resembling subacute granulomatous thyroiditis (De Quervain's) or that of chronic non-suppurative thyroiditis. On rare occasions it can present secondary to military TB and present with multiple sinuses or as fever of unknown origin.[8,9]

Investigations:

On standard blood investigations most patients are euthyroid, though few patients with thyroiditis may present with thyrotoxicosis or hypothyroidism[5] . An elevated ESR is in favour of thyroiditis though is not elevated in most cases. In the event of a clinical picture of thyroiditis with a negative antibody panel, a mantoux maybe done to evaluate for TB thyroiditis as one of the differential diagnosis.

An ultrasound generally shows a picture similar to that of multinodular goitre or an isolated collection suggestive of cold abscess. The definitive diagnosis still lies with histology, an FNAC mostly diagnoses the condition , demonstrating the presence of caseous necrosis. There are instances where FNAC is unable to demonstrate the presence of AFB and is diagnosed as colloid goitre(case reported by Sharma et al)[9] or hurthle cell adenoma(case reported by Majid et al)[7]. In cases where frank pus exudes on FNAC , culture may be done which confirms the diagnosis[7].

Management:

In a case of tubercular abscess, drainage is generally sufficient, though repeated aspirations with ATT are the least invasive mode of management. [10]. Surgical removal of the gland is necessary when there is evidence of nodular goitre or preoperative diagnosis is suggestive of a more sinister etiology. If the preoperative diagnosis itself is confirmative of TB one can proceed with ATT alone[12,13] which has shown to provide good patient outcomes and the avoidance of unnecessary surgery.[10]

Discussion:

Tuberculosis still remains an important health problem especially in developing countries. It was observed that certain tissues are relatively resistant to tuberculosis, ie heart, striated muscles, thyroid and pancreas.[14] Though this might be true which explains the rare presentation of TB at such sites, cases are still encountered. Tubercular thyroiditis though extremely rare must be kept as one of the differential diagnosis especially in an endemic area. Due to a multitude of presentations, coming to a diagnosis of Tb thyroiditis remains a challenge with the diagnosis hinging on FNAC and histopathology.[15] In cases where the diagnosis is clear on FNAC, ATT seems to be sufficient, though surgery is necessary in cases presenting as goitres wherein preoperative diagnosis with FNAC is suggestive of other etiologies usually colloid goitre or hurthle cell adenoma and later confirmed on histopathology. Abscess' must be drained sometimes multiple aspirations are needed, with all cases needing ATT.

This article could not evaluate the use of newer methods of diagnosis of TB such as Gene Xpert, which is a nucleic acid amplification test(NAAT), detecting all the clinically relevant Rifampicin resistance inducing mutations in the RNA polymerase beta (rpoB) gene in the *Mycobacterium tuberculosis* genome,[16] as most of the articles

reviewed were before the advent of this diagnostic modality. The use of such tests could avoid unnecessary surgery in cases where FNAC is inconclusive and should be an avenue for research in the years to come.

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