

Tuberculosis of Thyroid Gland in a Pediatric Patient

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Abstract

Tuberculosis of thyroid gland is rare. It is a rare pathology even in countries where tuberculosis is endemic. Here, we present a case of thyroid gland tuberculosis with no evidence of pulmonary tuberculosis in a three-year-old girl. The patient presented with a midline swelling which was diagnosed to be thyroglossal cyst clinically. Ultrasound imaging not only helped in proper localization of the pathology but also helped in reconsidering the diagnosis made clinically.

Key words

Thyroid, Tuberculosis, Pediatric

Introduction

Tuberculosis of the thyroid gland is rare [1-4]. As a result, when a patient presents with diffuse thyroid enlargement, solitary nodule or a midline swelling, tubercular etiology is never the first diagnosis. With Fine Needle Aspiration (FNA) being involved in the patient work up, there is an increase in number of cases being reported as tuberculosis of the thyroid gland [5].

Ultrasound helps in better visualization of pathology of the thyroid, which has been suspected clinically. It can differentiate between diffuse diseases of the thyroid from the localized one. It can differentiate between the cystic and the solid component of the pathology. It can measure the dimensions of the lesion and define its relationship with other anatomical structures in the neck. Inclusion of color doppler in the study can give the information about the vascularity of the lesion. Ultrasound findings assist in diagnosis and better delineation of pathology which helps in deciding the appropriate line of treatment and follow up if needed.

Here, we present a case of tuberculosis of thyroid gland in a pediatric patient.

Case Report

A 3-year-old female child was referred to our department for ultrasound. According to the history given by the mother the presenting complaint was a progressively increasing swelling of the midline of the neck for past four months. It was painless. There was no history of difficulty in deglutition or breathing. There was no change noticed in the voice. There was no restriction or pain in neck movements. There was no history of fever, malaise, loss of weight, loss of appetite or any other generalized symptom. No symptoms of hypo or hyperthyroidism were present. The overlying skin had turned red for last few days (Figure 1).

On examination there was a swelling, slightly on the left side of the midline.



Figure 1: Clinical photograph: The swelling with inflammation of the overlying skin.



Figure 2: X-ray chest: Normal.

The skin appeared inflamed, but the child did not complaint of any pain or fever. The swelling was fluctuating and moved with deglutition. Its surface was smooth, and margin was not very well defined. No nodes could be palpated. Routine blood tests and thyroid function tests were within normal range. X-ray chest was normal (Figure 2).

On ultrasound, a complex cystic lesion with low level internal echoes was seen in the left lobe of thyroid extending anteriorly in the subcutaneous region (Figure 3). It measured 1.4 x 1.5 cm. On color doppler flow imaging no intralesional vascularity could be detected. FNA from the lesion was reported as chronic granulomatous inflammation with necrosis likely tubercular etiology.

Patient was started on Anti-Tubercular Treatment (ATT). When patient came for follow up after 4 months, almost complete resolution of the midline swelling was seen clinically (Figure 4) and on ultrasound (Figure 5A-5B).

Discussion

Tuberculosis of the thyroid gland is rare [1-4]. Thyroid is perceived to be an organ that is resistant to tuberculosis infection as it has a rich blood supply, high Iodine content and contains colloid which is bactericidal. Initial reports of tuberculosis of thyroid in the literature are from studies carried out on thyroidectomy specimens [4].

Tuberculosis of the thyroid may be associated with Pulmonary or extrapulmonary tuberculosis. The disease

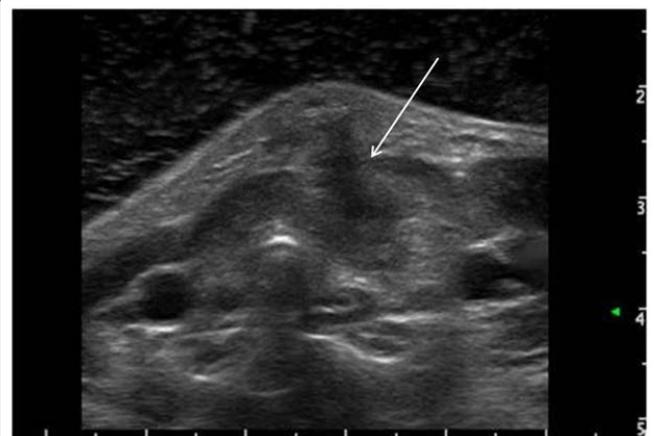


Figure 3: Ultrasound neck: A complex cystic lesion with low level internal echoes seen in the left lobe of thyroid extending anteriorly in the subcutaneous region.

spreads to the thyroid by haematogenous or lymphatic route, in cases of disseminated tuberculosis. There is miliary spread to the thyroid gland and no abnormality of thyroid is suspected clinically [3].

Focal tuberculosis of the thyroid gland presents as a localized swelling, as in the present case. Clinically the lesion can mimic a thyroglossal cyst, as in our case or an abscess because of prominent cystic component. It can also present as solitary thyroid nodule [5-8]. Sonographically the lesion can mimic a neoplasm, thyroid nodule or suppurative abscess. FNA is the method of investigation for all such localized lesions of thyroid. Predominantly cystic component

and low-level echoes in our case on ultrasound lead to the diagnosis of an abscess. Another differential diagnosis with such a clinical picture is a pyriform sinus fistula [9]. There is a history of repeated respiratory tract infections and recurrent left sided neck infections in such cases. In our case there was no such history. No fistulous tract could be demonstrated on ultrasound. No inflammatory nodes were seen.



Figure 4: Clinical photograph after 4 months of treatment.



Figure 5: Ultrasound and Color Doppler after 4 months of treatment shows almost complete remission.

Treatment of thyroid tuberculosis consists of anti-tuberculous drug therapy combined with surgical removal of the affected part of the gland, or surgical drainage. In our case patient responded to the anti-tubercular drugs and surgical intervention was not required.

Tuberculosis of the thyroid gland must be kept in mind as a differential diagnosis for an enlarged thyroid gland

or localized thyroid swelling [6-11]. The cases are usually misdiagnosed [8].

Tuberculosis is endemic in India and other south-east countries. In some cases, diagnosing tuberculosis is a real challenge, especially in cases of extra-pulmonary tuberculosis, which is usually paucibacillary and manifestations are often non-specific. Investigations like blood tests and X-ray chest may be non-contributory as found in our case. Empirical use of ATT is justified in case of high suspicion. ATT is effective and surgical intervention can be avoided. However, a close monitoring and follow-up is needed to confirm an appropriate clinical response, to validate its further continuation and to detect drug toxicity at the earliest [12]. This was meticulously done in our case. Imaging by ultrasound helps in better delineation of pathology and guiding FNA. It also helps in regular follow up of the patient and in response assessment.

Conflict of Interest

The authors declared no conflict of interest.

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