

Case Report

Unusual Cause of Neck Pain in Young Female Adult: Disseminated Tuberculosis

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Abstract

Tuberculosis of thyroid gland is rare even in countries like India with significant disease burden and its clinical presentation is varied and may be missed if not kept in the differential diagnosis of neck pain or midline neck swelling. It can manifest as abscess (cold or acute), goitre (multinodular or generalized). Confirmation of aetiology is made by Fine Needle Aspiration (FNA) showing acid-fast bacilli or caseous granuloma. Here, we present a rare case of an apparently immunocompetent 19-year-old adult female with disseminated tuberculosis manifesting in the form of neck pain due to Thyroid Tuberculosis (TT). This case highlights the importance of working up for tuberculosis as a part of neck swelling presenting as neck pain with fever due to thyroid gland involvement.

Keywords: Thyroid tuberculosis; Granuloma; Disseminated tuberculosis; Fine needle aspiration cytology; Immunocompetent

Case Presentation

A case of 19-year adolescent girl with complaints of throat pain and fever for two weeks with loss of appetite along with 5 kg weight loss over last 2 months. She did not complain of any neck swelling, difficulty in breathing, hoarseness of voice or difficulty in swallowing. She was in close contact with a family member who was undergoing treatment for pulmonary tuberculosis.

Her vitals were stable. There was a non-tender 1 cm × 1.8 cm midline neck swelling which moved with deglutition with normal skin over the swelling. There was a matted lymph node in left cervical region, level 2, and measuring 1 cm × 1.2 cm. Her body mass index was 17.3 kg/m².

Laboratory work showed haemoglobin of 10.1 g/dL, total leukocyte counts 6930/μL and erythrocyte sedimentation rate of 20 mm/hr with normal liver function and renal function tests. Tuberculin Skin Test by mantoux technique with 5TU (Tuberculin Units) showed 25 mm induration after 48 hours. Chest radiograph revealed bilateral apparently normal lung fields. Thyroid hormone values were for her age as follows: T3-3.36 (0.82-2.13) ng/mL, T4- 1.15 (0.8-1.8) μg/dL, TSH-1.01 (0.7-6.40) μIU/mL. Work up for Human Immunodeficiency Virus (HIV) and anti-thyroid peroxidase antibodies were reported negative. Ultrasonography of the neck showed well-defined heterogeneous, hypo echoic solid lesion in the thyroid gland left lobe measuring 1.2 cm × 1.3 cm × 1.7 cm along with multiple left cervical

lymphadenopathy (level 2,3), largest size measuring approximately 1 cm × 1.2 cm × 1.4 cm. Computerized Tomography (CT) scan of the neck and chest demonstrated evidence of enlarged left lobe of thyroid 1.4 cm × 1.5 cm × 1.9 cm (right lobe - 1 cm × 1.1 cm × 1.1 cm) with 1.5 cm × 0.5 cm cavity in superior segment of left lower lobe along with necrotic mediastinal lymph nodes in the following stations -2R, 4R, 10R and 7R. Bronchoalveolar Lavage (BAL) from left lower lobe apical segment was positive for MTb (*Mycobacterium Tuberculosis*) by Cartridge Based Nucleic Acid Amplification Test (CBNAAT) with positive AFB smear. Fine needle aspiration of thyroid gland was suggestive of granulomatous thyroiditis showing well formed epithelioid granulomas, polymorphous population of reactive lymphoid cells and histiocytes with benign thyroid follicular epithelial cells (Figure 1).

Based on these findings, a diagnosis of disseminated tuberculosis was made as it involved two non contiguous organs namely lung parenchyma and thyroid gland. Weight based anti-tubercular therapy category I was started as per local tuberculosis policy. After 6 months of treatment there was significant improvement in her symptoms with marked reduction in size of thyroid swelling clinically.

Discussion

Tuberculosis disease is known to involve many parts of the body. Thyroid gland involvement in tuberculosis infection also known as Thyroid Tuberculosis (TT) is quite an unusual entity [1-3]. Possible explanations for this are: (1) bactericidal activity of colloid material in the thyroid gland; (2) high blood flow of thyroid gland; (3) phagocytic activity destroying tubercle bacilli [4]. Thyroid involvement in tuberculosis may occur *via* haematogenous, lymphatic route or cervical lymph node or due to the direct contiguous spread from the larynx. TT may manifest clinically as thyroid swelling due to formation of caseous granuloma, a nodule or cold abscess. Our patient had disseminated TB with predominant involvement of thyroid gland and lung parenchyma manifesting clinically with only weight loss, fever and neck pain. Post-mortem studies have shown Thyroid Tuberculosis (TT) incidence with of 0.003%-0.1%. But this rate is 0.2% in among chronic thyroiditis specimens this rate is 0.2% and among miliary tuberculosis cases its 14%. Patients with tuberculosis

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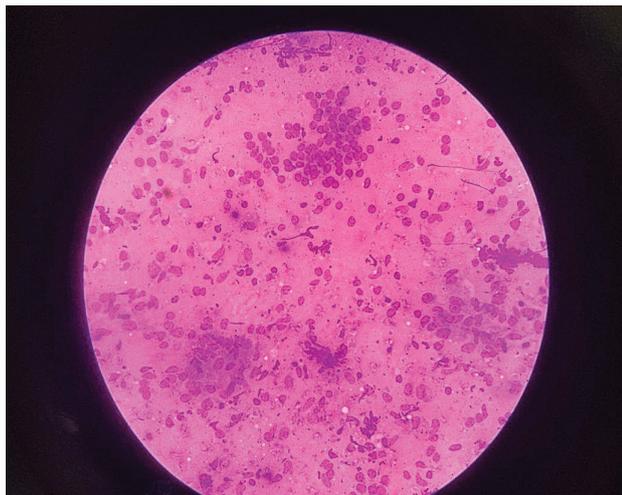


Figure 1: Cytology of Fine needle aspiration from thyroid gland (Giemsa stain in 400x) showing: epithelioid granulomas in (8 O' clock position) and normal follicular thyroid cells (12 O' clock).

thyroiditis most of the times are euthyroid but can be hyperthyroid in the initial stages due to gland destruction.

Thyroid granulomatous inflammation can be seen in thyroiditis, fungal infection, TB, sarcoidosis, or vasculitis. However, caseous necrosis is commonly seen in tuberculous inflammation. In our patient disseminated tuberculosis diagnosis was clinched by FNA of thyroid swelling along with BAL showing MTb in CBNAAT and AFB smear. Thyroid TB resolves with proper antituberculosis treatment in most of the patients.

Conclusion

Tuberculosis of Thyroid (TT) is unusual, and it should be part of differential diagnosis of midline neck pain or thyroid swelling in high tuberculosis burden countries like India.

Conflicting Interest

The authors declare that there is no conflict of interest.

References

1. Avinash A, Amita P, Joshi S, Ogale SB, Sheode JH. Tuberculosis of thyroid gland. *Ind J Tubercul.* 1997;44:205-8.
2. Zivaljevic V, Paunovic I, Diklic A. Tuberculosis of the thyroid gland: a case report. *Acta Chir Belg.* 2007;107(1):70-2.
3. Khan EM, Haque I, Pandey R, Mishra SK, Sharma AK. Tuberculosis of the thyroid gland: a clinicopathological profile of four cases and review of the literature. *Aust N Z J Surg.* 1993;63(10):807-10.
4. Modayil PC, Leslie A, Jacob A. Tuberculous infection of thyroid gland: a case report. *Case Rep Med.* 2019;2009:416231.