

Thyroid Abscess as a Complication of Tubercular Cervical Lymphadenopathy

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Abstract: *Thyroid gland abscess is unusual type of head and neck infection. The low incidence of the disease is due to high vascularity of the gland and its ability to resist infection. Tuberculosis of Thyroid gland presenting as abscess is very rare with occasional case reports in literature. A case of tubercular thyroid abscess is presented here.*

Keywords: Tuberculosis, Thyroid Abscess, Cervical lymphadenopathy

1. Introduction

Tuberculosis of thyroid is a rare manifestation of extra pulmonary tuberculosis. The incidence is very low even in countries where pulmonary tuberculosis is endemic ^[1]. The incidence of this disease varies from 0.1–1.15% ^[1, 2]. This low incidence of thyroid tuberculosis is due to high vascularity of thyroid gland and its ability to resist infection ^[2]. The thyroid gland gets infected by hematogenous and lymphogenous route or direct spread from tubercular cervical lymph nodes ^[3]. The clinical presentation of tubercular infection of thyroid can be chronic or cold abscess, subacute thyroiditis and rarely as acute abscess. However, the most common manifestation is cold or caseous abscess and a solitary thyroid nodule. Tubercular thyroid can be confused with malignant thyroid ^[4]. The accurate diagnosis needs help of radiological investigations besides elaborate clinical history and examination ^[5]. Tissue diagnosis either by fine needle aspiration or histopathology is essential ^[6]. Tubercular thyroid abscess is occasionally available in medical literature. One such case report of tubercular abscess has been presented here.

2. Case Report

A 19-year-old girl known case of cervical lymphadenopathy on anti-tubercular treatment presented with swelling in the thyroid region more on right side and history of difficulty in swallowing with solids.

On clinical examination there was a single swelling of size 3x2cm in right lobe of thyroid moving with deglutition/respiration. The margins were well demarcated, smooth surface, non-tender, smooth to hard in consistency and overlying skin was normal. There were no clinical features of hypothyroidism or hyperthyroidism. Routine blood investigations were done; hemoglobin 10.2gm/dl, total leucocytes count $9.3 \times 10^3/\mu\text{L}$. Thyroid function tests T3(3.89nmol/L), T4 (19.3nmol/L) were elevated. TSH was low(0.06 $\mu\text{IU/ml}$). CRP was positive(48mg/100ml). X-ray chest was normal.

Ultrasonography of neck revealed a 30x26x20 mm ill-defined hypoechoic lesion in the right lobe of thyroid. This solitary thyroid lesion was showing thick irregular wall with internal echoes and peripheral vascularity. The lesion was seen to be continuous with adjacent lymph node suggestive of contiguous spread. It was reported as suspected thyroid abscess. (Figure 1)

Computed tomography imaging scan of the neck showed a peripherally enhancing ill-defined hypodense lesion in right lobe of thyroid contiguous with adjacent pre-tracheal lymph node (Figure 2). CECT Chest revealed mediastinal lymphadenopathy and centrilobular nodules in right upper lobe-features consistent with active pulmonary tuberculosis.

Fine needle aspiration from this solitary thyroid lesion was done to confirm the diagnosis. The stained smears revealed degenerated and numerous intact neutrophils, cell debris and macrophages in necrotic background. A few epithelioid granuloma and multinucleated giant cells are also seen suggestive of tuberculosis with central caseous necrosis. The cytological diagnosis of tubercular abscess was made. The patient continued the antitubercular treatment. The swelling significantly decreased in size in next two months. The patient is currently on follow-up.

3. Discussion

Tuberculosis of thyroid is rare diagnosis reported since early 19th century ^[7]. It is a rare extrapulmonary manifestation of tuberculosis, the true incidence of tuberculosis of thyroid is unknown. This rare involvement of thyroid gland to tubercular infection is attributed to high vascularity of thyroid gland and bactericidal property of colloid material ^[8].

Thyroid tuberculosis may be primary or secondary concurrent with pulmonary tuberculosis. The primary involvement of thyroid without pulmonary involvement is extremely rare ^[9]. There are two routes of infection by which thyroid gland get infected; generalized dissemination by hematogenous route as in miliary tuberculosis and a focal spread to thyroid gland. Focal spread may be primary of thyroid gland called primary tuberculosis of thyroid gland ^[10]. However, it may be secondary from adjacent lymph node ^[11]. Occasionally, there may be lymphogenous spread.

The clinical presentation of tubercular thyroid abscess is generally as a solitary thyroid nodule or a cold abscess rarely presenting as acute abscess ^[12, 13]. Solid thyroid nodule can mimic clinically as thyroid carcinoma ^[14]. Presenting symptoms in tubercular thyroid abscess are variable. Most of the patients present as solitary thyroid nodule with no sign of acute inflammation. All main diseases of thyroid gland should be considered including carcinoma thyroid ^[15]. The accurate diagnosis of tubercular thyroid must be made by using investigations. The ultrasound is the basic

investigation for a solitary thyroid nodule. Radiological imaging techniques of MRI scan and CT scan helps to rule out malignancy of Thyroid and detect foci of active pulmonary tuberculosis if present^[16].

However, confirmation of diagnosis can only be done using tissue diagnostic technique of fine needle aspiration cytology^[17]. The cytological diagnosis can be made by presence of tubercular granuloma. Acid-fast bacilli staining may not detect tubercular bacilli^[18]. In such cases PCR can be done^[19]. The confirmatory diagnosis of tuberculosis of thyroid by fine needle aspiration cytology can avoid unnecessary thyroid surgery for histopathological confirmation. Antitubercular therapy is the preferred method of treatment of tuberculosis of thyroid nowadays^[20]. If thick pus is present in central part, it can be aspirated using thick needle. Repeated aspiration may be necessary. In our case, following clinical examination of the thyroid nodule patient underwent a USG thyroid and CT chest for further evaluation which showed features suggestive of abscess spreading from a contiguous level VI lymph node, and evidence of primary pulmonary tuberculosis. Fine Needle

Aspiration proved it to be tubercular abscess. Patient continued ATT as advised and there was considerable reduction in size of thyroid swelling in two months. The patient is currently on follow-up.

4. Conclusion

Tubercular thyroid abscess is a rare clinical diagnosis as pulmonary tuberculosis may not be associated in most of these patients. Tubercular thyroid abscess can be diagnosed only with a very high degree of clinical suspicion. Imaging techniques like magnetic resonance imaging scan and computed tomography scan are useful in making the diagnosis of tubercular thyroid abscess. Definitive diagnosis can be made by cytological examination by presence of tubercular granuloma. Tubercular thyroid abscess can be treated by aspiration of pus followed by antitubercular treatment thus avoiding surgery of thyroid.

5. Illustrations

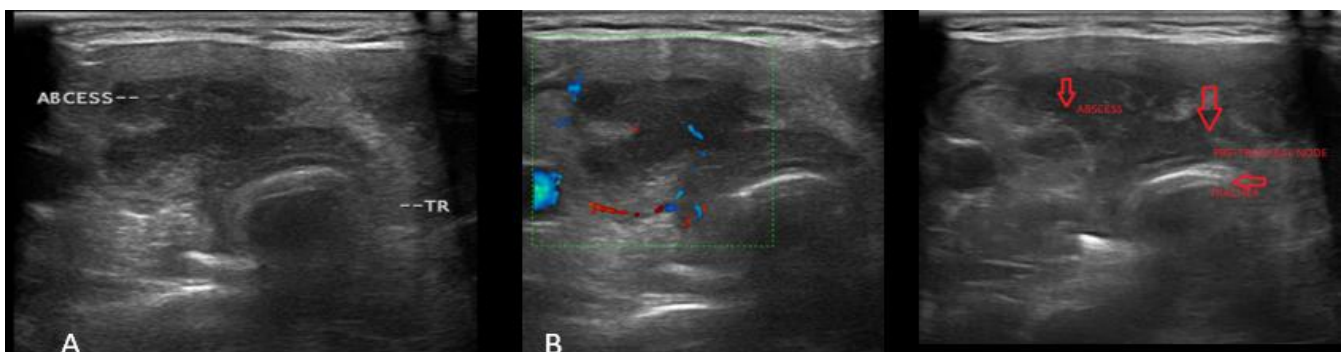


FIGURE-1

HRUS neck of a 19yr female k/c/o Tubercular cervical lymphadenopathy shows A. Ill defined hypodense lesion in right lobe of thyroid with few mobile internal echoes B. On color doppler the lesion shows increased peripheral vascularity. C. The lesion in right lobe was found in continuity with the adjacent pretracheal necrotic lymph node at level VI. The above lesion was diagnosed as thyroid abscess spreading from adjacent node

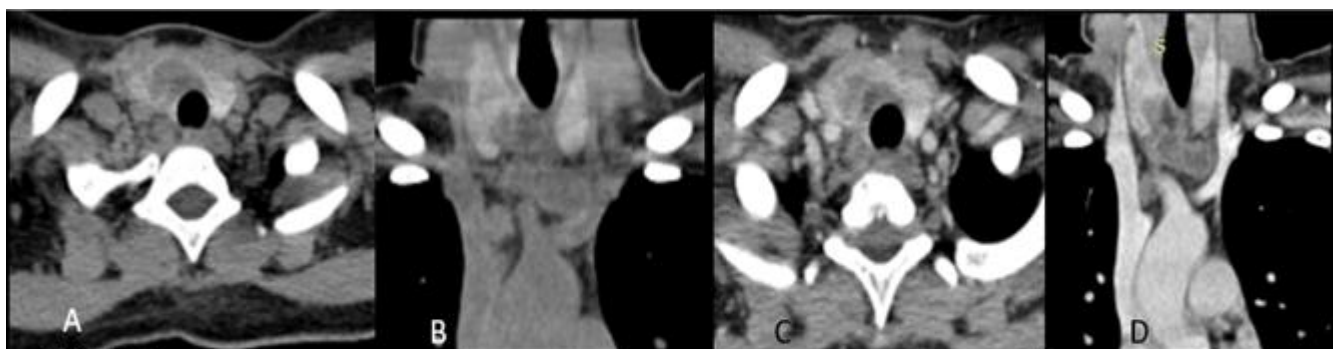
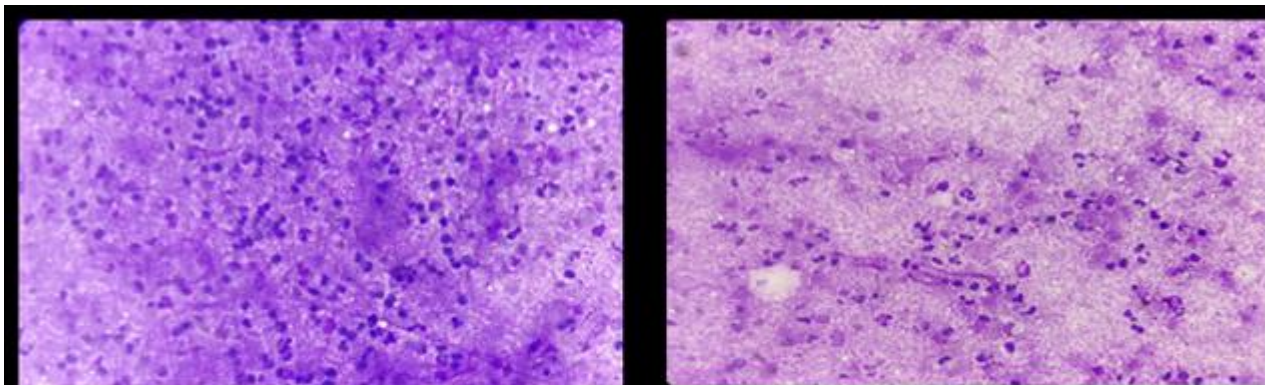


FIGURE-2

CECT NECK OF THE PATIENT A,B. Axial and coronal reformatted images reveals a hypodense lesion in right lobe of thyroid. C,D. Post contrast images show peripherally enhancing lesion continous with adjacent pretracheal necrotic lymph node suggestive of abscess.

**FIGURE-3**

The stained smears revealed degenerated and intact neutrophils, and macrophages in serofibrinous background. A few epithelioid granuloma and multinucleated giant cells are also seen suggestive of tuberculosis with central caseous necrosis.

6. Conflict of Interest

There was no conflict of interest.

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