

## Acute tuberculosis thyroid abscess presenting with thyrotoxicosis

Sendhil Sengodan<sup>1,\*</sup>, T. Henry Prabhakaran<sup>2</sup>

<sup>1</sup>Professor, <sup>2</sup>Assistant Professor, Dept. of Surgery, IRT Perundurai Medical and College Hospital, Perundurai, Tamil Nadu, India

**\*Corresponding Author:**

Email: sendhilsengodan@gmail.com

### Abstract

Tuberculosis of the thyroid gland is a rare entity even in countries like India where tuberculosis is endemic. The patients may present with thyroid swelling, inflammation and very rarely thyroid dysfunction. Caseous necrosis and epithelioid cell granulomas on fine-needle aspiration cytology and histopathological examination are diagnostic. We present two cases of thyroid gland tuberculosis. One patient had subclinical thyrotoxicosis with presentation mimicking acute bacterial thyroiditis. The other patient had a solitary thyroid nodule with normal thyroid function. Involvement of other organs was absent in both cases, Proper diagnosis may avoid unnecessary surgical interventions.

**Keywords:** Acute tuberculosis, Thyroid abscess, Thyrotoxicosis.

### Introduction

Tuberculosis of the thyroid is an extremely rare clinical entity. Very few case reports are available in India despite the high incidence of tuberculosis.<sup>(1)</sup> Reference to the literature early last century the frequency is 0.1-0.4% in histologically diagnosed specimens<sup>(2,3)</sup> and recent reports reveal 0.1-1.5 %.<sup>(4)</sup> Clinical presentation of tuberculosis of thyroid varies from thyroiditis, cold nodule, hot nodule to acute and chronic abscess. Acute tubercular thyroid abscess with thyrotoxicosis has not been reported yet. We present this very rare entity which was diagnosed early and treated successfully.

### Case History

A 36-year-old lady presented with painful swelling in front of the neck associated with fever, chills and rigor. Patient had odynophagia, dysphagia and palpitation. She had a history of insomnia, weight loss and oligomenorrhea. On examination, there was a tender hemispherical swelling of 10 cm x 6 cm size involving in the left lobe of the thyroid and isthmus. Swelling moved up on deglutition and had variable consistency.

The erythrocyte sedimentation rate was elevated (100 mm/hr) and thyroid profile showed elevated T3 (374.1 ng/dl), T4 (19.3 ug/dl), low thyroid stimulating hormone (< 0.1uU/ml). Ultrasound of the thyroid revealed irregular thick walled abscess involving the isthmus and left lobe of the thyroid. Fine needle aspiration cytology (FNAC) revealed acute and chronic inflammatory cells, macrophages, epithelioid cell clusters and thyroid acinar cells- all but the acute inflammatory cells suggestive of tuberculous thyroiditis. The acute cells were suggestive of a co-existing infection. Non-dependent aspiration was done and thick white non foul smelling pus was aspirated. Pus was negative for acid fast bacilli and acid fast bacilli culture was ordered. Chest X-ray was normal.

Polymerase chain reaction for Mycobacterium tuberculosis was positive.

Patient was started on neomethazole, broad spectrum antibiotics and anti-tubercular treatment. After one month on follow up, the patient presented to the outpatient having gained 5 kg in weight.

### Discussion

Tuberculosis of thyroid is very, exact reason for the rarity of the entity is unknown. The hypothesis mentioned include thyroidal colloidal material possessing bactericidal action, extremely high blood flow, excess of iodine and enhanced destruction of tubercle bacilli by increased activity of phagocytes. Lebert published the first paper on tuberculosis thyroiditis in 1862.<sup>(5)</sup> The first case of tuberculous abscess of thyroid was reported by Schwartz 1894.

The pathological forms of tuberculous thyroid include multiple thyroid granulomatia, goiter with caseation, cold abscess, chronic fibrosing thyroiditis and least common acute abscess.<sup>(6)</sup> The exact mechanism of development of thyroid tubercular abscess remains unknown. A bacillary dissemination to different organs including thyroid from primary focus of infection in lungs is likely. Local factors, either immunological or non-immunological play a crucial role in the development of tuberculosis at the extrapulmonary site.

The clinical presentation is variable and usually consists of local symptoms related to enlargement of thyroid gland while thyroid function is rarely affected.<sup>(6,7)</sup> In our case, thyroid swelling was associated with hyperthyroid state. Hyperthyroidism is due to disruption of follicles with release of preformed thyroid hormones into circulation. Fine needle aspiration or aspiration needle biopsy is performed in order to detect tuberculosis of thyroid gland. This is an effective method to confirm diagnosis.<sup>(8)</sup>

Ultrasound and CT findings can help as it shows heterogeneous hypoechoic mass on ultrasound and peripheral enhancing low density lesion on CT. In this case, FNAC confirmed diagnosis with the Polymerase chain reaction of mycobacterium tuberculosis turning out positive. Thyroid tuberculosis should be distinguished from acute thyroiditis, thyroid cancer and Reidel's thyroiditis. Treatment of tuberculous thyroiditis is not much different as the treatment of other common tuberculosis. At least 6 month of therapy is required using two or three of the following medications – rifampicin, isoniazid, pyrazinamide and ethambutal. In case of tuberculous thyroid abscess, drainage is sufficient and surgery is required rarely.<sup>(9)</sup> In our case, we have done repeated aspirations from thyroid abscess and started anti tuberculous therapy along with antithyroid drugs.

### Conclusion

Preoperative diagnosis of acute tuberculous abscess thyroid is important because of availability of medical treatment and limited role of surgery. This condition should be kept in mind while evaluating patient with thyroid nodule, in communities where prevalence of tuberculosis is high.

### References

1. Mondal A, Patra DK. Efficacy of fine needle aspiration cytology in the diagnosis of tuberculosis of the thyroid gland. A study of 18 cases. *J Laryngol Otol* 1995;109:36-8.
2. Collar FA, Huggins CB. Tuberculosis of the thyroid gland. *Ann Surg* 1926;84:804-20.
3. Rankin FW, Graham AS. Tuberculosis of the thyroid gland. *Ann Surg.* 1932;96(4):625–648.
4. Baidya Arjun, Singha Arijit, Bhattacharjee Rana, Dalal Bibhas Saha. Tuberculosis of thyroid gland: two case reports. *Oxf Med Case Reports.* 2015 Apr;2015(4):262-4.
5. Lebert H. Die Krankheiten der Schilddrüse und ihre Behandlung. *BRESLAU* 1862;264.
6. Jhonson AG, Thomas RJ. Acute tuberculous abscess – the thyroid gland *Br.J.Surg* 1973;60:668-669.
7. Orlandi F, Fiorni S, Gonzatto I. Tubercular involvement of the thyroid gland: a report of two cases. *Horm Res* 1999;52:291-4.
8. Tan KK. Tuberculosis of the thyroid gland—a review. *Ann Acad Med Singapore* 1993;22:580-2.
9. El Malki HO, el Absi M, Mohsine R. Tuberculosis of the thyroid. Diagnosis and treatment. *Ann Chir* 2002;127:385-7.