

# Primary Tuberculous abscess of thyroid gland with discharging sinus: A rare entity

A Jain, V Maheshwari, K Alam, F Siddiqui, R Khan

## Citation

A Jain, V Maheshwari, K Alam, F Siddiqui, R Khan. *Primary Tuberculous abscess of thyroid gland with discharging sinus: A rare entity*. The Internet Journal of Pathology. 2007 Volume 7 Number 2.

## Abstract

Thyroid tuberculosis is uncommon. Nowadays since extrapulmonary tuberculous involvement is seen more frequently (especially with HIV- induced immunosuppression), the existence of this condition should be recognized when goiters or thyroid nodules are being treated. We present a rare case of primary thyroid tuberculosis presenting as a cold abscess with discharging sinus.

## INTRODUCTION

Tuberculosis affecting the thyroid gland is a rare condition, even in countries with a high prevalence of this disease. The exact figures for its incidence are unavailable; however, in different studies, it has been found to be ranging from 0.4% [1] to 1.15% [2] of all thyroid lesions.

## CASE REPORT

A 40 year old male patient presented with slow, progressively increasing swelling over right side of midline of neck, since 6 months. There were occasional episodes of scanty, whitish discharge from the swelling. On examination, there was a 7.0 x 5.0 cm swelling on right side of midline of neck, which moved well with deglutition, but not on protrusion of tongue. The swelling had a smooth surface, with firm to hard consistency, and ill-defined margins. A small sinus opening with little whitish discharge was present in the center of the swelling. The rest of the thyroid gland was normal. No symptoms of complications, or hypo or hyperthyroidism were present. There was no previous history of tuberculosis or contact with an open case of tuberculosis.

Investigations revealed a normal haemogram except a raised ESR of 50mm. T3, T4, TSH levels were normal. A chest X-ray was also normal. A fine needle aspirate of the swelling showed only few degenerated cells in a haemorrhagic background. Smears of the discharge from sinus showed only necrotic debris and were inconclusive.

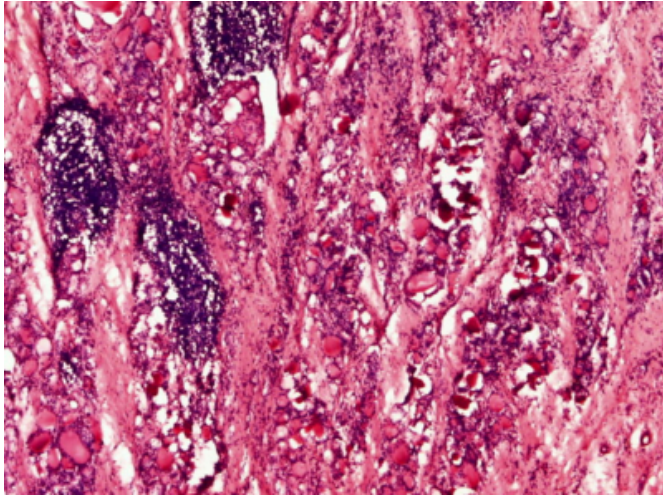
The patient underwent right hemithyroidectomy and he

made an uneventful postoperative recovery. Gross examination of the specimen showed a single globular mass measuring 7.0 x 6.0 x 4.5 cm. The outer surface was shiny with areas of congestion. On cut section, a single large cavity was seen, measuring 6.0 x 4.5 cm, with a maximum wall thickness of 1.8 cm, and containing friable necrotic material. A smear as well as culture swab from necrotic material were sent for bacteriological examination.

Microscopic examination of multiple sections from the thyroid swelling showed atrophic thyroid follicles with lymphoid aggregates in the stroma (Fig. 1), large areas of haemorrhage, fibrosis, calcification, and areas of caseous necrosis surrounded by epithelioid cells and Langhan's giant cells (Fig. 2). Sections from the wall of abscess cavity revealed caseous necrosis with epithelioid histiocytes (Fig. 3) and fibrosis. A histopathological diagnosis of granulomatous thyroiditis favouring tuberculosis was given. The smears as well as culture from necrotic material showed tubercle bacilli, thus confirming the diagnosis.

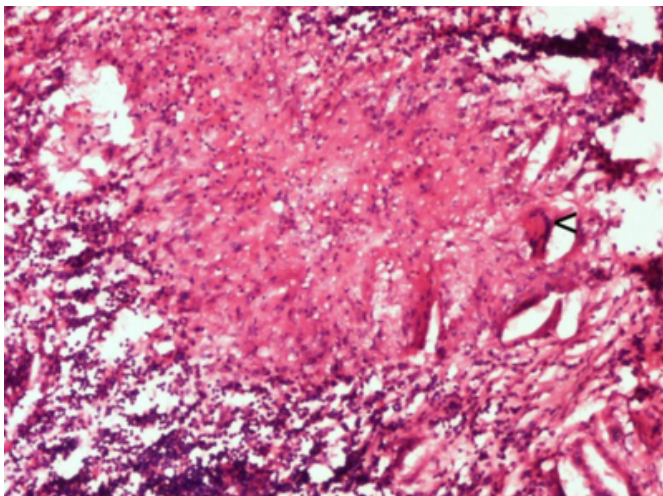
**Figure 1**

Figure 1: Photomicrograph from thyroid swelling showing atrophic thyroid follicles with lymphocytic infiltrate in stroma, along with formation of lymphoid aggregates (H & E, x50).



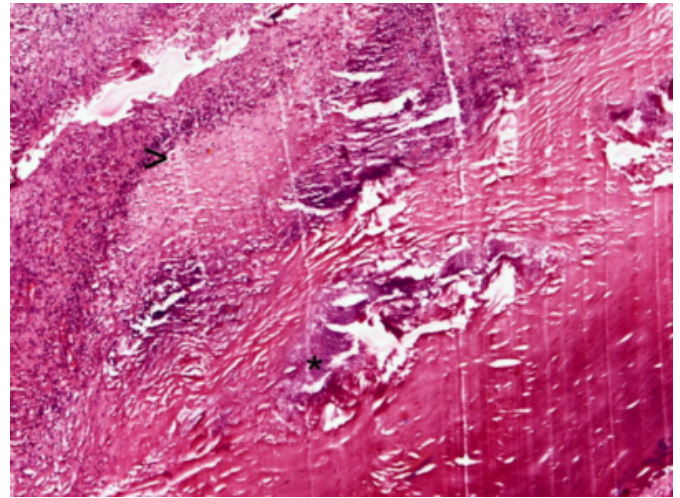
**Figure 2**

Figure 2: Photomicrograph showing epithelioid cell granuloma with Langhan's giant cell ( < ), and lymphocytic infiltrate (H & E, x 125).



**Figure 3**

Figure 3: Photomicrograph from thyroid abscess wall showing caseous necrosis, epithelioid histiocytes ( > ), calcifications ( ), and fibrosis (H & E, x 50).



The patient was placed on isoniazid, rifampicin, ethambutol, pyrazinamide along with pyndoxme and diclofenac. Follow-up over three months after operation was uneventful.

## DISCUSSION

It is observed that certain tissues are relatively resistant to tuberculous infection, and so it is rare to find tubercles in heart, striated muscle, thyroid and pancreas [3]. The relative immunity of thyroid gland has been confirmed but has not been explained. Primary involvement of thyroid gland is difficult to explain. A latent focus of infection perhaps is of great importance in the development of such type of extrapulmonary tuberculosis [4]. This is in contrast to the thyroid involvement associated with pulmonary or extrapulmonary tuberculosis, where spread of disease occurs by hematogenous or lymphogenous route, or directly from larynx or tubercular cervical lymphadenitis [5]. Miliary spread to thyroid gland as a part of generalized dissemination has never been shown to give rise to clinical thyroid disease. Alternatively, focal caseous tuberculosis of thyroid may present as localized swelling mimicking carcinoma, as a nodule, lump, cold abscess or rarely an acute abscess [6]. Only an occasional case of cold abscess presenting with a chronic sinus is reported in the literature [7].

The symptoms of thyroid tuberculosis are misleading, and pathological findings are of increasing importance for diagnosis. Fine needle aspiration has proved quite efficient in detecting tuberculosis of thyroid gland [2]. The following pre-requisite conditions for diagnosis of thyroid tuberculosis

were described in early 1939: 1) demonstration of acid fast bacilli within thyroid, 2) a necrotic or abscessed gland, 3) demonstration of tuberculous focus outside. Histological and bacteriological confirmation is adequate and fulfillment of third criterion is not essential [5]. Nowadays it is stated that acid fast bacilli are not always found, and therefore multiple coalesced and caseated epithelioid cell granulomas along with giant cells are considered to be diagnostic of tuberculous affection of the gland [8].

The important differential diagnoses are thyroid cancer, acute thyroiditis, Riedel thyroiditis and thyroid nodules. Lymphocytic infiltration and presence of granulomas may also be seen in sarcoidosis, subacute thyroiditis and goitrous autoimmune thyroiditis [6].

Antitubercular therapy and surgical removal of the affected parts of the thyroid gland are the most common methods of treatment. Repeated puncture drainage in combination with antitubercular drugs is applied nowadays as well [6].

## ACKNOWLEDGMENTS

We thank Professor A. K. Verma and Dr. Hasan Harris from

Department of Surgery, J.N. Medical College, A.M.U., Aligarh; for helping us understand the clinical aspects of this patient as well as the disease.

## References

1. Al- Mulhim AA, Zakaria HM, Abdel Hadi MS, Al- Mulhim FA, Al- Tamimi DM, Wosornu L. Thyroid tuberculosis mimicking carcinoma: a report of two cases. *Surg Today*. 2002; 32 (12): 1064-7.
2. 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 Jan; 109 (1): 36-8.
3. Cotran RS, Kumar V, Robbins SL. In Robbins Pathological basis of disease, 5th edition, 1994. WB Saunders Company U.S., pp 326 and 82.
4. Barnes P, Weatherstone R. Tuberculosis of the thyroid. Two case reports. *Br J Dis Chest* 1979; 73: 187-91.
5. Balasarkar D, Dhareshwar J, Satoskar RR, Awsare N, Mahey R, Kumar V. Primary thyroid tuberculosis. Available from: URL: [http://www.bhj.org/journal/special\\_issue\\_tb/SP\\_13.HTM](http://www.bhj.org/journal/special_issue_tb/SP_13.HTM)
6. Simkus A. Thyroid tuberculosis. *Medicina* 2004; 40 (#): 201-4.
7. Khan EM, Haque I, Pandey R, Mishra SK, Sharma SK. Tuberculosis of the thyroid gland: a clinicopathological profile of four cases and review of the literature. *Aust N Z J Surg*. 1993 Oct; 63 (10): 807-10.
8. Bhattacharryya A, Wiles PG. The aetiology and pathology of thyroid disease. *Hospital Pharmacist* 2000; 7 (1): 6-13.

**Author Information**

**Anshu Jain, M.D. Pathology**

Senior Resident, J.N. Medical College, A.M.U.

**Veena Maheshwari, M.D. Pathology**

Professor, J.N. Medical College, A.M.U.

**Kiran Alam, M.D. Pathology**

Lecturer, J.N. Medical College, A.M.U.

**Farhan Siddiqui, M.D. Pathology**

Senior Resident, J.N. Medical College, A.M.U.

**Roobina Khan, M.D. Pathology**

Lecturer, J.N. Medical College, A.M.U.