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CASE REPORT

Thyroid Tuberculosis: Yes, It is True

[1]Rajeev Gupta, [2]Nariender K Mohindroo, [3]Ramesh Azad

ABSTRACT

Tuberculosis of the thyroid gland is an uncommon disease and primary involvement of thyroid is even rarer. It is very uncommon disease even in countries where tuberculosis is endemic. Histologically, the presence of necrotizing epithelioid cell granulomas along with Langhans-type giant cells are the hallmark features of thyroid tuberculosis. In this case report, we are presenting a rare case of thyroid tuberculosis in a 40-year-old female.

Keywords: Epithelioid cell granulomas, Thyroid, Tuberculosis.

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INTRODUCTION

Tuberculosis of thyroid gland is extremely uncommon. The incidence of thyroid tuberculosis is low even in those countries where the prevalence of tuberculosis is high.[1] The supposed reasons for the relative immunity of thyroid gland from tuberculosis are the bactericidal attribute of the colloid, extensive vascularity, and high iodine content of the gland.[2] The primary form of the disease is even rarer. Most of the cases are associated with other loci of the disease in the body. Sometimes presented with regional lymph nodes, thyroid tuberculosis can mask a thyroid tumor.[3]Antituberculosis therapy of the thyroid gland along with surgical removal of affected parts are the most common methods for the treatment of thyroid tuberculosis.[4,5] Tuberculosis of the thyroid gland assumes various forms, such as diffuse goiter, soft or hard nodule, painful and swollen thyroiditis, or an acute or cold abscess.[6] We present a case of a 40-year-old female who presented with painless solitary thyroid nodule for 6 months, which on histology was proved to be tuberculosis of thyroid.

[1]Resident, [2]Professor and Head, [3]Professor

[1-3]Department of ENT, Indira Gandhi Medical College, Shimla Himachal Pradesh, India

Corresponding Author: Nariender K Mohindroo, Professor and Head, Department of ENT, Indira Gandhi Medical College Shimla, Himachal Pradesh, India, Phone: +919418100092 e-mail: drnkmohindroo@gmail.com

CASE REPORT

A 40-year-old female presented to us as an outpatient at Indira Gandhi Medical College, Shimla with swelling in front of neck (left side) for 6 months. The swelling was gradually progressing in size since last 6 months. There was no complaint of dysphasia or dyspnea. There was no history of changes in quality of voice. The patient did not give any history of fever, weight loss of weight, decreased appetite, cough, or blood in sputum. There was no past or family history of tuberculosis. Erythrocyte sedimentation rate was 15 mm/1st hour. On examination there was a firm swelling of 4×4 cm in size at midline extending toward left side. Swelling was moving with deglutition. The swelling was nontender and did not show any signs of inflammation. Thyroid function tests of the patient revealed normal levels of the thyroid hormones. Ultrasonography of the neck revealed a hyperechoic nodular lesion involving left lobe of thyroid with few anechoic areas (Fig. 1). No calcification seen. Fine needle aspiration cytology was suggestive of colloid goiter with cystic changes. The patient was posted for lobectomy and performed. On gross examination the left lobe of thyroid was enlarged measuring 4.5×4×4 cm. Microscopic section showed well-encapsulated lesion with difference in architecture inside and outside the capsule. Inside the capsule the focal areas of hemorrhage and calcification were seen and outside the capsule dense areas of lymphocytic infiltration and numerous caseating epithelioid cell granulomas along with

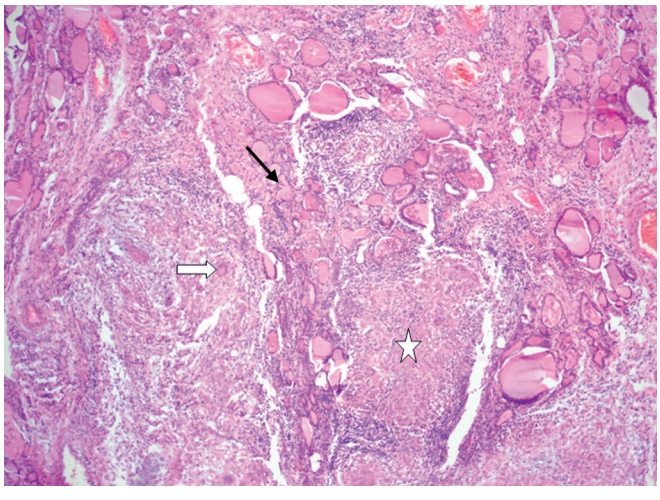

Fig. 1: Photomicrograph showing caseating epithelioid cells granulomas with Langhans giant cells in thyroid parenchyma; ⇨ Arrow showing Langhans giant cells; ☆ Star showing caseating necrosis; ➘ Arrow showing thyroid parenchyma

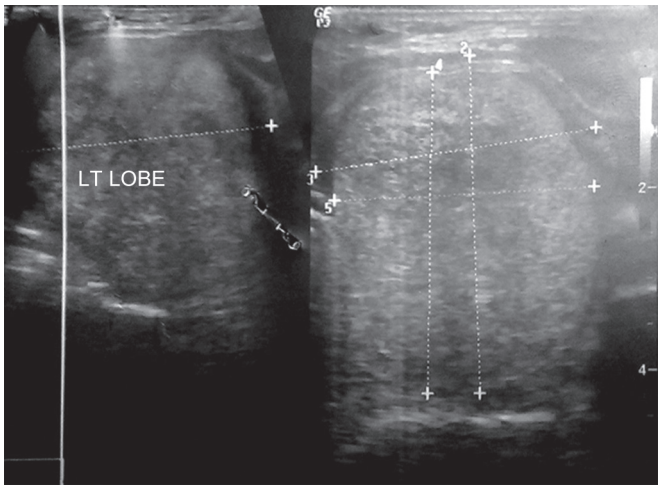

Fig. 2: Hyperechoic nodular lesion involving left lobe of thyroid with few anechoic areas

Langhan giant cells (Fig. 2). Ziehl Neelsen staining for acid fast bacilli was noncontributory. So finally diagnosis was made as follicular adenoma with caseating granulomatous thyroiditis, suggestive of tuberculous thyroiditis for this patient was put on antitubercular drugs and patient is comfortable without any complaint till follow up.

DISCUSSION

It is observed that certain tissues are relatively resistant to tuberculosis. Tuberculosis of heart, striated muscles, thyroid, and pancreas are rarely encountered. Primary or secondary form of thyroid gland tuberculosis is an extremely rare disease. According to various studies, its frequency is 0.1 to 0.4% in histologically diagnosed specimens.[7] In a study conducted by Das et al,[8] the incidence of tuberculous thyroiditis was 0.6% among 1,283 thyroid lesions subjected to aspiration cytology. Rokitansky[9] found only 21 cases of thyroid tuberculosis out of 20,758 surgically resected thyroid glands (0.1%). The ability of thyroid to resist infection is attributed to a number of factors: Prosperous lymphatic and vascular supply, well-developed capsule, and high iodine content of the gland.[10] Colloid possessing bactericidal action, destruction of tubercle bacilli occurs due to increased physiological activity of phagocytes in hyperthyroidism and possible role of thyroid hormones.[11] The patient may be asymptomatic or have symptoms of dysphonia, dysphagia, dysponea, and rarely recurrent laryngeal nerve paralysis due to expanding gland.[7]

Many diseases may cause granulomatous inflammation in thyroid, like granulomatous thyroiditis, palpation thyroiditis, fungal infection, tuberculosis, sarcoidosis, granulomatous vasculitis, and foreign body reaction. However, caseating necrosis is characteristic feature of tuberculous inflammation.[12]

Seed[13] described three criteria for diagnosis of thyroid tuberculosis: (1) Demonstration of acid fast bacilli within thyroid; (2) a necrotic or abscess; (3) demonstration of tuberculous focus outside. There is no doubt that the presence of AFB is the confirmatory evidence of tuberculosis, but it is often not possible to demonstrate AFB; therefore, the diagnosis of tuberculous thyroiditis is usually made only after histopathological examination. In thyroid gland tuberculosis, the diagnosis is rarely and difficult to be made clinically or during operation and, therefore, the gland is not subjected to routine culture examination. AFB is usually not seen in histopathological sections.[14] Therefore, the diagnosis of tuberculosis is usually made on histological grounds.

CONCLUSION

Tuberculosis of thyroid, although a rare entity, should be kept in mind as a differential diagnosis when evaluating a thyroid nodule or abscess. Final diagnosis is made on histopathological examination of specimen. The treatment is mainly based on the antituberculous agents, but surgery or drainage sometimes required large abscess along with antituberculous drug therapy.

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