Thyroid Tuberculosis in a Multinodular Goitre Patient

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ABSTRACT

Tuberculosis of the thyroid gland is an extremely rare condition. We aimed to present a case of thyroid tuberculosis detected in a 50 year old female patient presented with a thyroid mass, weakness and dyspnea for three years. The patient was referred to our hospital for evaluation of thyroid nodules. She underwent bilateral total thyroidectomy. The histopathological diagnosis after surgery was tuberculosis of the thyroid gland. The incidence of extrapulmonary forms of tuberculosis has increased in recent years. Although it is observed rarely, tuberculosis should be kept in mind in the differential diagnosis of nodular lesions of the thyroid gland.

Key Words: *Thyroid, tuberculosis, goitre*

Bir Multinodüler Guatr Hastasında Tiroid Tüberkülozu

ÖZET

Tiroid bezi tüberkülozu oldukça ender rastlanan bir durumdur. Burada, 3 yıldır var olan halsizlik, dispne ve tiroid nodülü şikayetleri ile başvuran 50 yaşında kadın hastada saptanan tiroid tüberkülozu olgusunu sunmayı amaçladık. Tiroid nodülünün değerlendirilmesi için hastanemize başvuran hastaya bilateral total tiroidektomi uygulandı. Olguya, cerrahi sonrası histopatolojik inceleme ile tiroid tüberkülozu tanısı konuldu. Tüberkülozun ekstrapulmoner formlarının insidansında son yıllarda artış görülmektedir. Tiroid tüberkülozu nadir görülmekle birlikte, nodüler tiroid lezyonlarının ayırıcı tanısında akılda tutulmalıdır.

Anahtar kelimeler*: Tiroid, tüberküloz, guatr*

INTRODUCTION

Tuberculosis of the thyroid gland is a very rare condition (1). It can occur either as part of a miliary spread or as a primary lesion in the thyroid (2). Signs and symptoms are variable and mostly related to enlargement of the thyroid gland. Thyroid dysfunction is rare. The diagnosis has to be made by histopathological examination and demonstration of the tuberculous granuloma with central caseating necrosis in biopsy (3). Herein we present a case of thyroid tuberculosis arised as solitary nodule of thyroid.

CASE REPORT

A 50 year old woman applied to hospital with a thyroid mass, weakness and dyspnea for three years. There was no tuberculosis history in the patient's anamnesis, family and relatives. Physical examination revealed a diffusely enlarged thyroid gland and nodules in the right and left lobes. Her pulse rate was 76/min, fever was 36.6 ºC and blood pressure was 120/70 mmHg. There was no evidence of lymphadenopathy. The cardiopulmonary and abdominal examinations were normal. Her serum free T3, T4 and thyroid stimulating hormone levels were found to be within normal limits. The white blood cell count was 11000/mm^3, haemoglobin was 13.1 g/dl, platelet count was 262000/mm^3. Other laboratory investigations were found to be within normal limits. Her test for HIV was negative. Thyroid ultrasonography revealed a 25x20 mm hypoechoic, heterogeneus and solitary nodule within the right lobe and 45x38 mm hypoechoic, solitary and also round cystic nodule within the left lobe of thyroid gland. Her chest X- ray was normal. A bilateral total thyroidectomy was performed under general anesthesia and the patient recovered uneventfully.

On pathologic examination of the thyroid tissue, the right lobe was measured to be 6.5x3x2 cm and the left lobe was 6x5x4 cm grossly. The cut surface of right lobe was brown with colloidal and nodular appearance. On the cut sections of the left lobe; an encapsulated lesion with whitish brown surface filling the lobe was detected. Multiple samples were taken from both of the thyroid lobes. Tissues were embedded in paraffin, sections of 3 µ thickness were obtained from paraffin blocks and stained with hematoxylin eosin. On microscopic evaluation; the lesion at the left lobe was diagnosed as follicular adenoma. The sections of the right thyroid lobe revealed some foci with granulomas between the normal thyroid follicles lined by cuboidal epithelium and containing colloid (Fig.1). These foci composed of granulomas were detec-ted in two different sections. The granulomas were composed of histiocytes, lymphocytes, fibroblasts and central caseating necrosis (Fig.2). Wıthin the necrotic center, a group of tuberculosis bacilli was detected by histochemical EZN

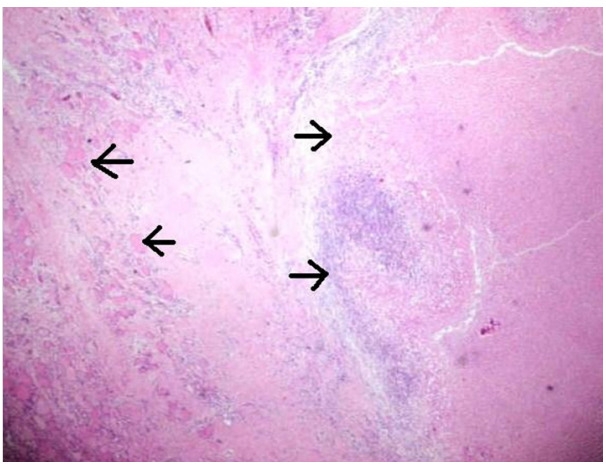

***Figure 1**. Left arrows show thyroid follicules containing colloid and right arrows show granuloma with central caseating necrosis. (Hematoxylin eosine X20)*

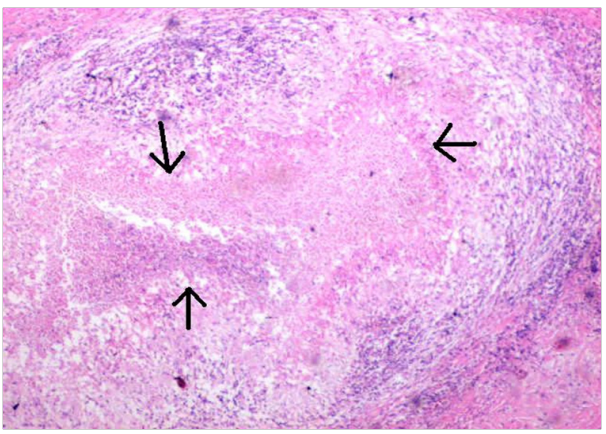

***Figure 2**. Tuberculous granuloma composed of epitheloid histiocytes, lymphocytes and fibroblasts with central caseating necrosis is seen. Arrows show caseating necrosis at the center. (Hematoxylin eosine X100)*

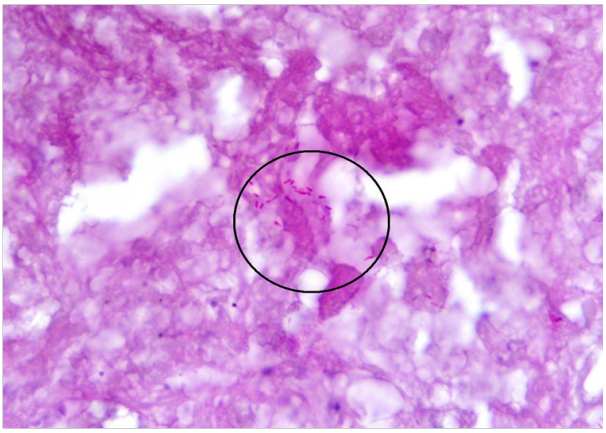

***Figure 3**. A group of tuberculosis bacilli within the central caseating necrosis was shown with histochemical EZN staining (EZNX1000)*

staining (Fig. 3). The diagnosis of tuberculosis of thyroid was given to patient with these findings.

Antituberculous therapy consisting of isoniazid 300 mg/day, rifampicin 600 mg/day, pyrazinamide 1500mg/day and ethambutol 1500mg/day was given to patient. Follow up over two months after operation was uneventful.

DISCUSSION

Tuberculosis of thyroid gland is rare with a reported incidence of 0.1% (1-3). The first case of tuberculosis of the thyroid was reported by Lebert in 1862 in a patient (4). Seven cases of microscopic involvement of thyroid in 100 autopsies of patients who died from disseminated tuberculosis were described by Chiari in 1878 (4). Bruns reported the first case of tuberculous thyroiditis in 1893 (4). The first report of successful drainage of tuberculous thyroid abscess was by Schwarts in 1894 (4). Five cases of thyroid tuberculosis were described in 1926 by Coller and Huggins in a series of 1200 of thyroid operated (5). In 1932, Rankin and Graham studied a large series of 20758 partial thyroidectomy specimens from Mayo Clinic between 1920 and 1931, only 21 cases of thyroid tuberculosis were diagnosed, an incidence of 0.1%. A similar incidence was confirmed more recently by Levitt in 1952, who found only 2 cases of thyroid tuberculosis among 2114 consecutive thyroid specimen (4). Since then, there have been relatively few cases of tuberculous involvement of the thyroid gland reported, and almost all cases have been associated with tubercular foci elsewhere in the body. Isolated tuberculosis of the thyroid gland is a rare form of presentation of the disease (4).

The exact reason for the rarity of this entity is unknown. Possible explanations in the literature include: colloid material possessing bactericidal action; high blood flow and an excess of iodine, and enhanced destruction of tubercle bacilli by increased physiological activity of phagocytes in hyperthyroidism (6).

AIDS, old age, malnutrition, Diabetes Mellitus can play role in occurrence of the thyroid tuberculosis (7). Extrapulmonary tuberculosis is increasing in frequency in patient with HIV- induced immunosuppression. Patients with tuberculosis and AIDS have high rates of extrapulmonary disease, ranging from 45 to 75 percent (8).

The diagnosis of thyroid tuberculosis is not easy because there is not any specific symptom to show this entity. It may present a broad spectrum of manifestations, but patients also may be asymptomatic. Weight loss, night sweating, fever and fatigue are the most common symptoms (9). Our patient was asymptomatic. According to us this may be due to the fact that our patient was not so old and had no disease which may affect the immune system particularly like HIV or other systemic diseases. Since we did not predict thyroid tuberculosis in our case, we put the diagnosis on histopathological basis.

Normal thyroid function is the most frequent laboratory finding; both hyperthyroidism and hipothyroidism have occasionally been found. Enlargement of regional lymph nodes does occur (1). In our patient, the thyroid function was normal as well.

Clinically, a diagnosis of primary thyroid infection can be suggested when the patient shows no evidence of involvement of other organs. In our patient, there was primary involvement of the thyroid gland by tuberculosis without an overt focus of tuberculosis seen elsewhere in the body. Histological documentation of typical lesions and/or demonstration of the tubercle bacilli from biopsies or aspirated specimens are required for diagnostic confirmation of active disease in the thyroid tissue (1,3,9).

Thyroid tuberculosis should be kept in mind in the differential diagnosis of thyroid nodules, notably in patients with a history of tuberculosis disease. Thyroid tuberculosis has to be differentiated from other granulomatous

thyroiditis presenting with multinucleated cells, such as de Quervain's thyroiditis. And also tuberculosis of the thyroid gland must be differentiated from thyroid cancer (1,3,9).

Treatment of thyroid tuberculosis does not differ from that of other forms of the disease (1). The concomitant use of effective drugs (rifampin, isoniazid, pyrazinamide, ethambutol) has to be continued for at least 6 months (10).

In conclusion, involvement of thyroid gland in tuberculosis is very rare. Tuberculosis should be kept in mind in the differential diagnosis of nodular lesions of the thyroid. Patients should receive antituberculosis therapy after surgery.

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