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CASE STUDY

THYROID TUBERCULOSIS MIMICKING AS RECURRENT MULTINODULAR GOITER

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ABSTRACT

Thyroid tuberculosis is an uncommon clinicopathological condition. The prevalence varies from 0.1% to 0.6% in histologically diagnosed specimens, including areas with endemic TB.[1]The diagnosis is often difficult as the clinical presentation has no distinct characteristics. The existence of this condition should be recognized when goiters or thyroid nodules are being treated because of more frequent involvement of extra-pulmonary sites of tuberculosis these days. We present a rare case of thyroid tuberculosis in a middle aged female, mimicking as a recurrent multinodulargoiter.

INTRODUCTION

Thyroid Tuberculosis is extremely rare. Only 200 cases have been recorded in the English language literature since the first case reported by Leber (Sadykov and Mukhtarov, 1987; Pazaitou *et al.,* 2002; Terzidis *et al*., 2007; Mondal and Patra, 1995; Ghosh *et al.,* 2007). 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.[7]The exact incidence of thyroid tuberculosis is not known, although various studies report a frequency varying from 0.2% in chronic thyroiditis to 7% among miliary tuberculosis cases (Simkus, 2004). Most of the cases in literature have been reported in middle-aged females, with the most common presentation being a solitary thyroid nodule.

Case report

We recently came across an interesting case of a 31 year old woman who presented with gradually increasing swelling over the anterior part of the neck on left side since 6 months. There was a recent development of painful deglutition for the past 1 month. She had undergone subtotal thyroidectomy 5 years back for multinodular goiter. There was no history of dyspnea or hoarseness of voice. Local examination revealed solitary nodule of thyroid on left side measuring 3.5 x 3 cms in size and moving well with deglutition but not with protrusion of tongue. There was no fixity or retrosternal extension of thyroid swelling. No cervical or axillary lymphadenopathy was noted. Routine hematologic and biochemical investigations were within the normal range. The thyroid-stimulating hormone, free T4 and free T4 were within the reference ranges. Chest radiograph and electrocardiogram was normal. Ultrasonography of the neck revealed localised collection adjacent to remaining left lobe of thyroid probably infective in etiology. Fine-needle aspiration cytology (FNAC) of the swelling was suggestive haemorrhagic smear with no evidence of thyroid follicular cells. Thyroid Scan showed multiple foci of radiotracer concentration corresponding to clinically palpable neck swellings in operated thyroid bed suggestive of recurrent multinodular goiter. In view of solitary thyroid nodule, the patient posted for left hemi-thyroidectomy. Intraoperatively, caseating material was seen which was sent for histopathological examination. Histopathological Examination reported tuberculous inflammation of thyroid. Microscopically, there were epithelioid cell granulomas, dense lymphoplasma cell and neutrophilic infiltrate along with extensive caseous necrosis. Patient started on anti-tuberculous therapy and is being followed up.

DISCUSSION

Tuberculosis can affect any part of the body, yet thyroid involvement is extremely rare. The exact reason for the rarity of the tuberculosis of thyroid is unknown. 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 extra-pulmonary tuberculosis (Barnes and

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Weatherstone, 1979). This is in contrast to the thyroid involvement associated with pulmonary or extra-pulmonary tuberculosis, where spread of disease occurs by hematogenous or lymphogenous route, or directly from larynx or tubercular cervical lymphadenitis. Miliary spread to thyroid gland as a part of generalized dissemination has never been

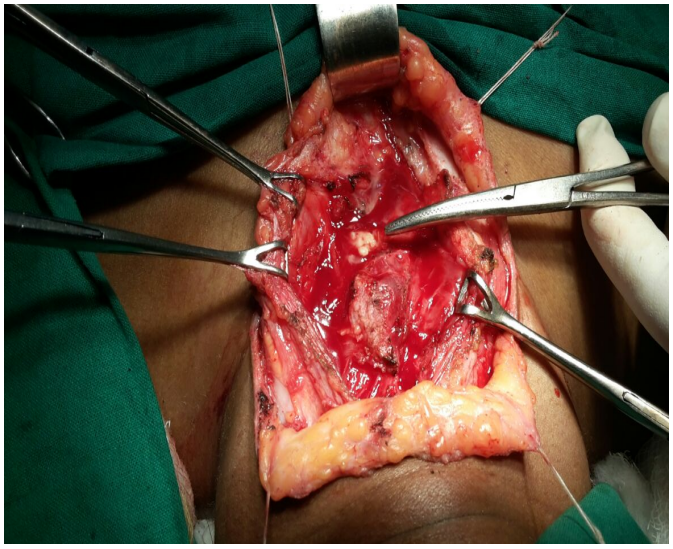

Fig. 1. Intra-operative Finding of caseous necrosis of remaining thyroid tissue

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 (Bulbuloglu *et al.,* 2006). Five types of presentation of tuberculosis of thyroid have been described in the literature: (1) multiple small lesions throughout the gland in association with miliary tuberculosis, (2) goiter with caseation, (3) cold abscess formation with chronic sinus, (4) chronic fibrosing tuberculosis which mimics de Quervan's thyroiditis, and (5) acute abscess formation.[9] Few patients have presented with pressure symptoms, such as dysphagia, dyspnea, and recurrent laryngeal nerve palsy or with cervical lymphadenopathy, raising suspicion of malignancy. In patients of thyroid tuberculosis, signs of tuberculosis elsewhere in the body are rarely found (Bulbuloglu *et al.,* 2006). Thyroid dysfunction associated with tuberculosis of thyroid is rare and very few cases of thyrotoxicosis (Kapoor *et al*., 1985) or hypothyroidism due to destruction of the thyroid by tuberculosis are reported in literature. FNAC is an effective way of preoperative diagnosis of tuberculosis of the thyroid gland (Mondal and Patra, 1995). The following pre-requisite conditions for diagnosis of thyroid tuberculosis were described in early 1939 by Seeds *et al.* 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. 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 (Bhattacharryya and Wiles, 2000). The mainstay of therapy in thyroid tuberculosis is antitubercular medication and most of the cases do not require any surgical intervention if diagnosed preoperatively (Simkus, 2004). Few cases of tubercular abscess may need drainage and surgical removal of the thyroid gland is required only very rarely, especially in cases simulating carcinoma.

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 granulomatous thyroiditis and goitrous autoimmune thyroiditis. Sarcoidosis and subacute granulomatous thyroiditis may also produce epithelioid cell granulomas in the thyroid gland but these can be differentiated from tubercular thyroiditis by the presence of caseation necrosis in the latter. Subacute granulomatous thyroiditis demonstrates giant cells surrounding the foci of degenerating follicles. There are few reports of tuberculous thyroiditis coexisting with a thyroid carcinoma, and this should be borne in mind in cases of granulomatous thyroiditis (Bulbuloglu *et al.,* 2006).

Conclusion

The atypical manifestation of tuberculosis of thyroid suggested that it is important to reinforce the knowledge of this disease. Although a rare condition, tuberculosis of thyroid should be considered in the differential diagnosis of thyroid swellings, particularly in areas with high prevalence of tuberculosis. It can have a varied presentation as a solitary nodule, multinodular goiter, or a diffuse goiter. FNAC may help in arriving at a preoperative diagnosis and institution of medical therapy. In cases where this is not possible, surgery may be required, especially to exclude the possibility of carcinoma of the thyroid. Preoperative diagnosis of thyroid tuberculosis is important because of the availability of medical treatment and the limited role of surgery.

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