CASE REPORT

A Case of Tuberculosis of the Thyroid Gland

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Summary

We report a case of tuberculosis of the thyroid gland associated with mediastinal lymphadenitis in a 30 year old male who presented with dysphagia and a mid line anterior neck swelling. Fine needle aspiration was positive for acid fast bacilli. He made an uneventful recovery with antituberculous drugs. Although seldom observed, tuberculosis should be kept in mind in the differential diagnosis of nodular lesions of the thyroid.

Key Words: Extra-pulmonary Tuberculosis, Thyroid, Tuberculosis

Introduction

Tuberculosis of the thyroid is an extremely rare clinical entity. Very few case reports are available from India despite a high incidence of tuberculosis [1]. The common mid line neck masses include thyroglossal duct cyst, lipomas, thyroid tumour or cyst and rarely a mid line lymph node, particularly the node just above the thyroid isthmus. Tuberculosis is an uncommon cause of thyroid disease and therefore only occasionally included in the differential diagnosis. We report a case of a 30 year old patient with thyroid tuberculosis who presented with mid line anterior neck swelling.

Case Report

A 30-year young male, non-smoker and non-alcoholic presented to us with cough, mucoid expectoration and chest pain for three months together with dysphagia and mid line anterior neck swelling for two months. He also gave a history of anorexia and loss of weight. There was no history of fever, haemoptysis, dyspnoea or dysphonia. His general physical examination revealed a 2.5-cm x 2-cm nodular firm mid line swelling in the anterior neck. The swelling moved on swallowing and no bruit was heard over it. No cervical lymph nodes were palpable and the overlying skin was normal. The chest was clear. Routine investigations revealed a haemoglobin of 13.5-g%, white cell count of 5,000 per cubic mm, with a normal differential count, Erythrocyte sedimentation rate (ESR) was 42 mm in the first hour (Westegren method). Mantoux test with 0.1 ml of one Tuberculin Unit of purified protein derivative resulted in the development of

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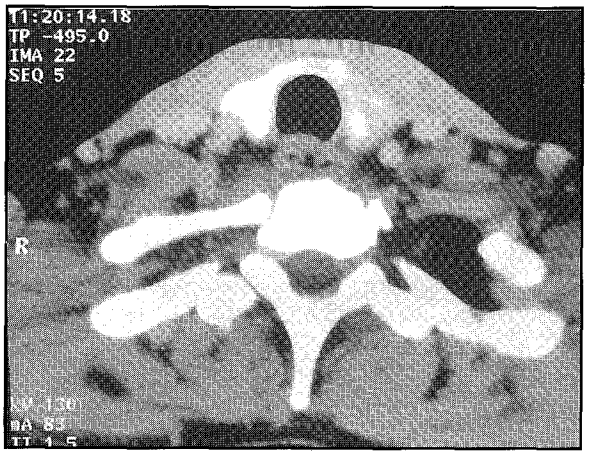

Figure 1. The CT scan of neck after intravenous non-ionic contrast revealed an ill-defined iso to hypodense soft tissue mass in the left lobe of the thyroid

18-mm induration at 48 hours. Test for HIV antibodies was negative. Chest roentgenogram revealed left hilar lymphadenopathy and right paratracheal lymph node. Fine needle aspiration cytology of the neck nodule revealed caseous necrosis, inflammatory exudate along with epitheloid cell granuloma and microscopy of the aspirated material was found to be positive for acid fast bacilli. It was difficult to differentiate whether this swelling was arising from the thyroid gland bed or an infected lymph node particularly the node just above the isthmus of thyroid. CT Scan of the neck after intravenous non-ionic contrast revealed an ill defined iso to hypodense soft tissue mass in the left lobe of the thyroid which replaced the normal thyroid parenchyma and was causing the mild enlargement of the gland (Fig.1). There was no spread of the mass beyond the gland. The right lobe and isthmus were normal. There was no invasion of the trachea. There was no lymphadenopathy. Thyroid function were: Free T_3 5.20 pg/ml (reference value: 1.5-5.0), Free T_4 2.27 ng/dl (0.95-2.23), TSH 0.081 U IU/ml(0.3-6.5). A thyroid nuclear scan (TCO_4) showed no concentration of Tracer.

The patient was treated with anti tuberculous drugs. He was given rifampicin 450mg, isoniazid 300 mg and pyrazinamide 1500mg for 2 months followed by rifampicin 450mg and isoniazid 300mg for 4 months. The neck swelling regressed completely after 3 weeks. Repeat thyroid scan after 3 months using $TC0_4$ showed normal uniform tracer concentration in both the lobes. Left hilar and right paratracheal glands regressed completely on repeat chest radiograph.

Discussion

Tuberculosis of the thyroid is rare. The exact reason for the rarity of this entity is unknown. The hypotheses mentioned in the literature include: (i) Colloid material possessing bactericidal action (ii) extremely high blood flow and an excess of iodine (iii) enhanced destruction of tubercle bacilli by increased physiological activity of phagocytes in hyperthyroidism.

Tuberculosis of the thyroid may be primary or in association with tuberculosis elsewhere in the body[2]. Mycobacteria may spread to the thyroid gland from an adjacent focus such as cervical or mediastinal adenitis or they may seed the gland during haematogenous dissemination[3]. Our patient had right paratracheal and left hilar gland[3] on chest X-ray that regressed completely with anti-tuberculous treatment.

Thyroid tuberculosis has a broad spectrum of pathological manifestation. The lesion may be multiple in association with miliary tuberculosis. A goitre may be present often with much caseation. Cold abscess may sometimes occur on the surface. Chronic fibrosing tuberculosis, which is difficult to distinguish from a De Quervain's

thyroditis, may occur. Acute abscess formation is the rarest manifestation.

Clinically, tuberculosis of the thyroid gland may manifest as a nodule, mass, thyroiditis (painful swelling), or acute or cold abscess. Symptoms from pressure effects include dysphagia, dyspnea, dysphonia and recurrent laryngeal nerve palsy. The involvement of thyroid gland in our patient presented clinically as a localised non-tender mild line swelling of the neck. Impairment of thyroid function has seldom been described. Only one case with myxoedema caused by extensive tissue destruction and some patients presenting with elevated thyroid function have been reported. Uptake of radioactive iodine (I^{131}) is usually extremely scanty and patchy, by the effected nodule. In our case there was no tracer concentration on nuclear scan with TCO4 in the beginning. Later on after three month of anti tuberculous treatment, there was normal and uniform tracer concentration uptake by the thyroid gland.

The diagnosis of tuberculosis of the thyroid gland is rarely made clinically. Most reported cases were found on the basis of surgical or autopsy specimens. However, with current sophisticated diagnostic facilities, cases can be diagnosed preoperatively. Fine needle aspiration is currently used for the diagnosis of a thyroid lesion and has been diagnostic in the setting of thyroid tuberculosis[1].

Conclusion

Tuberculosis is an uncommon cause of thyroid disease. We present this unusual case to remind physicians that tuberculosis should always be considered in the differential diagnosis of any neck mass, including anterior mid line masses. When fine needle aspirate contains purulent caseous material, the aspirated material should be tested for acid fast bacilli and cultured for *Mycobacteria*.

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: 36-38.
2. Johnson AG, Phillips ME, Thomas RJS. Acute tuberculous abscess of the thyroid gland.Brit J Surg 1973; 60(8): 668-9.
3. Sachs MK, Dickinson G, Amazon K. Tuberculosis adenitis of the thyroid mimicking subacute thyroiditis. Am J Med 1988; 85: 573-5.