CASE REPORTS

ABSTRACT

Objective: To present a case of thyroid tuberculosis and to discuss its clinical presentation, differential diagnoses and management.

Methods:

Design: Case Report
Setting: Tertiary Government Hospital
Patient: One

Results: A 55-year-old farmer presented with an 8-month progressively enlarging anterior neck mass, and fine needle aspiration biopsy yielded grossly turbid straw-colored aspirate admixed with blood with microscopy showing scattered inflammatory cells and macrophages set against a colloid background. After total thyroidectomy, histopathology revealed parenchymal infiltration by multiple aggregates of plump spindled to epitheloid cells forming granulomas with interspersed multinucleated giant cells, central caseation necrosis and surrounding fibrosis with chronic inflammatory infiltrates. The nodal masses also showed prominent germinal centers with interspersed epitheloid cells and foamy macrophages. Final diagnosis was chronic granulomatous inflammation consistent with tuberculosis.

Conclusion: Tuberculosis (TB) of the thyroid is a rare occurrence that can present as inflammation, infection or tumor formation of the thyroid gland. Diagnosis depends on identification of the tubercle from tissues and aspirates by acid fast staining and TB culture. Treatment consists of multiple drug therapy for tuberculosis but thyroidectomy may be an option if the thyroid gland is severely diseased.

Keywords: tuberculous, endocrine; thyroid disease

Tuberculosis of the Thyroid

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CASE REPORT
A 55-year-old male farmer from Pangasinan, Philippines was admitted on February 12, 2014 with a chief complaint of anterior neck mass. He was apparently in good general condition until 8 months prior to admission when he noticed a non-tender, soft, approximately golf ball sized mass in the anterior neck over the left lobe of the thyroid with no associated dysphagia, dyspnea, palpitations or tremors. Despite two unrecalled medications and regular follow-up with a private physician, the mass persistently enlarged.

He consulted in our institution 2 months prior to admission. Thyroid hormone test results were normal but neck ultrasonography revealed bilaterally enlarged thyroid lobes with cystic mass lesions measuring 30 x 23 x 11 mm and 40 x 38 x 32 mm in the right and left lobe, respectively. The cysts exhibited internal comet tail signs reflective of benign colloid lesions. Fine needle aspiration biopsy on the left anterolateral neck mass yielded grossly turbid straw-colored aspirate admixed with blood. Microscopy showed scattered inflammatory cells and macrophages set against a colloid background. Cell block revealed few inflammatory cells scattered in fibrinous background consistent with benign cystic fluid.

The patient was admitted for total thyroidectomy with a clinical impression of multinodular non-toxic goiter. Intraoperative findings revealed a multinodular thyroid gland with approximate combined size of 5 x 5 x 2 cm with firm yellow nodules in both lobes and isthmus with the largest nodule on the left lobe measuring approximately 3 x 2 x 3 cm. The rest of the cut specimen showed a meaty surface. The post-operative course was unremarkable.

Histopathology revealed the left thyroid lobe parenchyma to be infiltrated by multiple aggregates of plump spindled to epitheloid cells forming granulomas with interspersed multinucleated giant cells, central caseation necrosis and surrounding fibrosis with chronic inflammatory infiltrates. The nodal masses attached to the isthmus and right thyroid lobe also showed prominent germinal centers with interspersed epitheloid cells and foamy macrophages. Microsection of the right thyroid lobe revealed varisized, well circumscribed nodules of small to cystically dilated follicles containing scant to abundant colloid and lined by flattened to cuboidal lining cells. The isthmus appeared histologically unremarkable. The final histopathologic diagnosis was chronic granulomatous inflammation consistent with tuberculosis, left thyroid lobe and lymph nodes attached to the right thyroid lobe and isthmus; nodular hyperplasia, right thyroid lobe; no histopathologic change, isthmus. He was started on a course of anti-TB drugs.

DISCUSSION
Tuberculosis of the thyroid gland whether primary or secondary, is an extremely rare disease with only isolated reports, and a small number of case series have been reported in the literature even in countries endemic for TB. This may be attributed to the resistance of the thyroid gland to infections due to a number of factors, namely, a prosperous lymphatic and vascular supply, well developed capsule, high iodine content of the gland and bactericidal effect of the colloid and iodine. Iodine can interact on the outermost layer of microbial cells producing significant effect on their viability. In most cases, although dysphagia, dyspnea and more rarely dysphonia are the main symptoms of the disease, the patient may be asymptomatic as our patient was. In thyroid tuberculosis, the duration of presenting symptoms varies from 2 weeks to more than a year and there is no relationship with age or...
Tuberculosis primarily affecting the thyroid gland is much more rare and predictably more difficult to diagnose.

The diagnosis is mainly by fine-needle aspiration cytology, a diagnostic step that helps to avoid unnecessary surgery. Tuberculous lymphadenitis may manifest as a neck mass. Fine needle aspiration FNA) specimens may yield cytoclogic evidence consistent with tuberculosis including granulomatous inflammation and/or caseation necrosis. Multiple recent studies have demonstrated greater than 90% accuracy in diagnosis of tuberculous lymphadenitis with FNA. An improvement in technique to yield more positive acid-fast bacilli (AFB) and culture results from aspirate is called Forin which uses a large bore needle for aspiration of abscess, digesting it with sodium hydroxide and centrifuging it to concentrate microbes at the base of the tube. In most cases definitive diagnosis is made post-operatively by means of histopathological examination of the surgical specimen as in our patient. Since granulomatous lesions are not pathognomonic of tuberculosis (as they may be seen in sarcoidosis and subacute thyroiditis), caseating necrosis, if present, confirms the diagnosis of tuberculosis. In our case, the left thyroid lobe parenchyma was infiltrated by multiple aggregates of plump spindled to epithelioid cells forming granulomas, with interspersed multinucleated giant cells, central caseation necrosis and surrounding fibrosis with chronic inflammatory infiltrates. The nodal masses attached to the isthmus and right thyroid lobe also showed prominent germinal centers with interspersed epithelioid cells forming granulomas, with interspersed multinucleated giant cells, central caseation necrosis and surrounding fibrosis with chronic inflammatory infiltrates. The nodal masses attached to the isthmus and right thyroid lobe also showed prominent germinal centers with interspersed epithelioid cells forming granulomas, with interspersed multinucleated giant cells, central caseation necrosis and surrounding fibrosis with chronic inflammatory infiltrates.

Tuberculosis of the thyroid gland may be primary or occur in association with tuberculosis infection of other organs. In such cases, the thyroid is affected by the spread of bacilli via hematogenous or lymphatic routes or directly from the larynx or cervical lymphadenitis. Tuberculosis primarily affecting the thyroid gland is much more rare and predictably more difficult to diagnose.

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Treatment includes anti-TB drugs combined with surgical removal of the affected parts of the thyroid gland or surgical drainage with a good outcome. For early minor cases, drugs alone are sufficient. In our patient, the affected lobe was also resected and post-operative multiple TB drug therapy was instituted in accordance with our national TB control program.

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recommended that Erythrocyte Sedimentation Rate (ESR) and chest x-ray should be done. The most helpful diagnostic test is an ultrasound guided FNA and microbiological tests. 

Because we had not made the diagnosis of TB preoperatively and with multiple nodules in both lobes, our patient underwent total thyroidectomy. He was subsequently prescribed anti-TB drugs following the histopathologic report. Appropriate treatment still consists of anti-TB drugs since it is now recognized that complete resolution usually follows an appropriate antituberculous drug treatment only. The total duration of chemotherapy was 8 months with favourable outcome. Surgical intervention is recommended in cases with large abscess or a grossly diseased thyroid gland.