

Primary Tuberculosis Of Thyroid Gland – A Case Report

Dr. Gopal Singh Rajpurohit*, Dr. Pranav Patel*, Dr. Abhishek Savalia*, Dr. Pankaj R Modi**, Dr. Kalpesh H Patel***, Dr Roshni Patel****

*Senior Resident, **Professor, ***Assistant Professor, Department Of Surgery, ****Assistant Professor; Department Of Microbiology, B.J.M.C. And CIVIL Hospital, Ahmedabad.

Abstracts: Tuberculosis of the thyroid gland is very rare disease and isolated involvement of thyroid is even more rare. There are about 200 cases of thyroid gland tuberculosis had been reported worldwide. In India Das et al reported 21 cases thyroid tuberculosis. Almost all cases were secondary to some primary foci elsewhere in the body. The diagnosis is usually very difficult as the clinical presentation has no distinct characteristics. Clinically it may resemble thyroiditis or goiter or some malignant etiology. On histopathological evaluation, presence of necrotizing epithelioid cell granuloma along with Langhans giant cells are diagnostic of thyroid tuberculosis. Further demonstration of acid fast bacilli in Ziehl-Neelsen staining confirms diagnosis. [Gopal R. NJIRM 2014; 5(1) : 128-130]

Key Words: Tuberculosis; Thyroid Gland; Cold Abscess; Epithelioid Granuloma; Langhans Type Giant Cell

Author for correspondence: Dr. Gopal Singh Rajpurohit, Room No 18, D-8 Block, Civil Hospital, Asarwa, Ahmedabad. 380016 E-mail id : dr.gopalsingh@gmail.com

Introduction: A Tuberculosis of thyroid gland is a rare entity, and primary tuberculosis of thyroid gland is even more uncommon. Previously it was thought that thyroid is relatively immune to tuberculous infection. Supposed reasons for relative immunity of thyroid gland from tuberculosis are the bactericidal effect of colloid, high vascularity and high iodine content of gland. Among the different manifestations of tuberculous thyroiditis, abscess of the thyroid appears to be the rarest and the most dangerous. Sachs et al¹ reported 4 cases of tuberculous thyroiditis that were diagnosed preoperatively, the rest of the cases were diagnosed either from surgical specimen or from autopsy. A case of primary tuberculosis of thyroid gland presenting as abscess and diagnosed preoperatively is reported here.

Case History : A 34 years old male patient presented with complaints of midline neck swelling since last 4 months, which gradually increased in size and was painless. Patient also complained of dysphagia and change in voice since 2 months. There were no such history like weight loss, fever, cough, hemoptysis, anorexia and dyspnoea. There was no past and family history of tuberculosis. Also there were no signs and symptoms of hypo and hyperthyroidism. History of tobacco chewing was present. On examination there were multiple firm to hard swellings of 2x2, 3x2, and 2x2 present in isthmus, left lobe and right lobe respectively. Swellings were moving with deglutition. The swellings were non tender and did

not show any signs of inflammation. On routine investigations, complete blood count was normal and ESR was 40. Thyroid functions revealed normal T3, T4 while decreased TSH (0.0105). X-ray chest was normal. Ultrasonography revealed multiple varying sized hypoechoic cystic lesions with internal echoes within. FNAC was done and it was suggestive of cytomorphology of cold abscess – Koch's abscess. Near total thyroidectomy was performed. Gross examination and cut section revealed pus filled cavities and surrounding necrosis. On microscopic examination shows areas of caseating necrosis (fig.1) with epithelioid cell granulomas and Langhans type of giant cells (fig.2). Anti tuberculous therapy was started after surgery and patient responded well with the treatment. Dysphagia relieved and voice was improved significantly after 3 months of follow up.

Fig. 1. Photomicrograph showing caseating necrosis within thyroid follicle

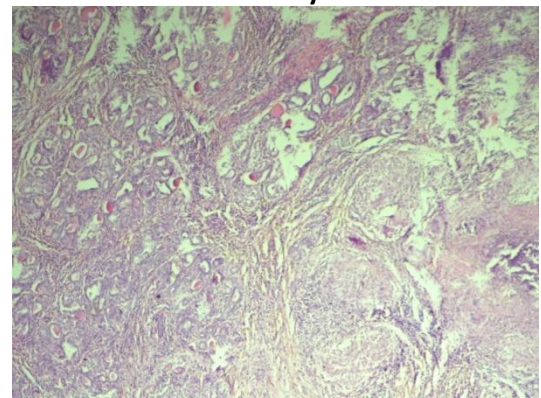
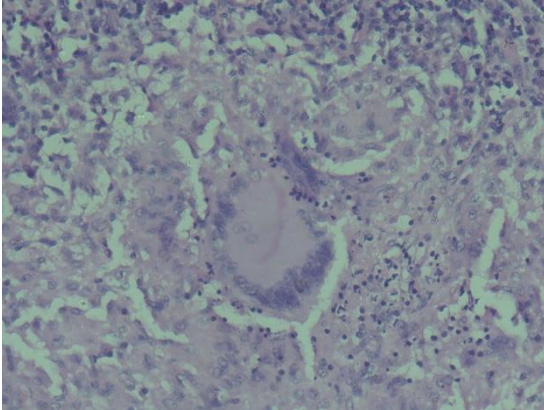


Fig.2. photomicrograph showing epithelioid granuloma with langhans giant cell



Discussion : Tuberculosis of the thyroid gland, whether primary or secondary, is an extremely rare disease. According to the literature, its frequency is 0.1-0.4% in histologically diagnosed specimens¹. In the study by Das et al², the incidence of tuberculous thyroiditis was 0.6%. This high frequency could be related to a higher incidence of tuberculosis in countries like India. Secondary involvement of the gland is associated with pulmonary or extra pulmonary tuberculosis, where spread of the disease occurs through hematogenous or lymphogenous route or directly from larynx or tubercular cervical lymphadenitis. A primary involvement of the thyroid gland in the absence of tuberculosis elsewhere is very uncommon and much more difficult to explain. The most common clinical presentation is a solitary thyroid nodule and an euthyroid state. Other uncommon forms of presentation include thyrotoxicosis, subacute thyroiditis, thyroid abscess and thyroid enlargement mimicking carcinoma^{3,4}. The patient may be asymptomatic or have symptoms of dysphonia, dysphagia, dyspnea and rarely, recurrent laryngeal nerve paralysis due to the expanding gland⁵.

Because of its rarity, thyroid tuberculosis is unlikely to be suspected clinically. The diagnosis is made only after FNAC or after histopathological examination of the surgical specimen when FNAC is negative. The characteristic morphologic features of tuberculous infection are necrotizing epithelioid cell granulomas with Langhans' giant cells (fig.2). Demonstration of AFB by ZN stain is confirmatory but this stain is frequently negative in tissue sections. A mycobacterial culture is helpful in the

later situation. In the absence of clinical suspicion of tuberculosis, especially when the presentation is a solitary thyroid nodule, it is unlikely that material will be taken for culture. The diagnosis thus rests on finding the typical granulomas of tuberculosis. According to Joll⁶, the inability to identify Koch's bacilli by staining or culture does not exclude the diagnosis of TB of the thyroid. However, others like Klassen and Curtis⁷ considered only those cases with positive AFB as TB of the thyroid. Other granulomatous lesions involving the thyroid gland include sarcoidosis and subacute thyroiditis.

These can be distinguished from tuberculosis by the presence of caseation and demonstration of AFB in the later. Our patient presented with firm to hard swelling in thyroid gland, dysphagia and dysphonia. Tuberculosis was not suspected clinically and only FNAC revealed the benign nature of the nodule. Histopathological examination of the near total thyroidectomy specimen was suggestive of tuberculosis associated with a multinodular colloid goiter. Typical epithelioid cell granulomas with central caseation necrosis were noted. There was no evidence of tuberculosis elsewhere in the body. An alternative and reliable technique of detecting Mycobacterium tuberculosis is the polymerase chain reaction. Surgery with administration of antituberculous drugs is considered to be the treatment of choice⁸ as was done successfully in the present case.

Conclusion: Tuberculosis should be considered in the differential diagnosis of thyroid swellings. FNAC with aspiration followed by antituberculous drug can be tried in single lesion. Final diagnosis is made by histopathological examination. Patients respond well to surgery along with antituberculous therapy.

References:

1. Sachs MK, Tuberculosis adenitis of the thyroid mimicking subacute thyroiditis Am J Otolaryngology. Jul-Aug 2007;28(4):267-70
2. Das DK, Pant CS, Chachra KL, Gupta AK. Fine needle aspiration cytology diagnosis of tuberculous thyroiditis. A report of 8 cases. Acta Cytol 1992; 36:517-522.
3. Collar FA, Huggins CB. Tuberculosis of the thyroid gland. Ann Surg 1926; 84:804-820.

4. Khan EM, Haque I, Pandey R, Mishra SK, Sharma AK. Tuberculosis of the thyroid gland: a clinicopathological profile of four cases and review of the literature. *Aust NZ J Surg* 1993; 63:807-810.
5. Al-Mulhim AA, Zakaria HM, Abdel Hadi MSA, Al-Mulhim FA, A I - Tamimi DM, Wosornu L. Thyroid tubercuosis mimicking carcinoma: report of two cases. *Surg Today* 2002; 32:1064-1067
6. Mondal A, Patra DK. Efficacy of fine needle aspiration cytology in the diagnosis of tuberculosis of thyroid gland: a study of 18 cases. *J Laryngol Otol* 1995; 109:36-38.
7. Joll CA. *Diseases of the thyroid gland*. London, Heinemann, 1932.
8. Klassen KP, Curtis GM. Tuberculous abscess of the thyroid gland. *Surgery* 1945; 17:552-559.
9. Rankin FW, Graham AS. Tuberculosis of the thyroid gland. *Ann Surg* 1932; 96:625-648.

Conflict of interest: None
Funding: None