

Sarcoidosis: A rare cause of thyroiditis

Sir,

Sarcoidosis is characterized by the formation of noncaseating granulomas and can involve almost every organ. The endocrine involvement is largely limited to calcium metabolism and pituitary dysfunction although thyroid dysfunction has been reported in a few cases.^[1] Thyroid infiltration by sarcoidosis was first described in 1938^[2] and was reported to be approximately 4% in autopsy series.^[3] Thyroid dysfunction has been reported in 16%–30% in various series, which is predominantly hypothyroidism.^[4,5] There is a wide range of variability among studies, regarding the association of sarcoidosis and thyroid autoimmunity.^[6] Thyroiditis is rarely associated with sarcoidosis, and in a large series of 3069 patients with thyroiditis, only three had associated sarcoidosis.^[7]

A 65-year-old woman presented with unintentional weight loss of about 10 kg in 6 months and a low-grade fever of around 100°F, with no significant diurnal variation for 3–4 months. Her appetite was not significantly affected. She also had a dull-aching pain in the neck. There was no swelling in the neck, change in voice, or dysphagia. There was no history of cough, expectoration, dyspnea, or chest pain. She did not have rashes, photosensitivity, oral ulcers, genital ulcers, joint pains, or dysuria. The patient also complained blurring of vision, redness of eyes, but no significant eye pain, watering, grittiness, photophobia, or headache. The patient had taken antitubercular treatment for lymph node tuberculosis 25 years back, and there was no chronic medication intake apart from antihypertensives.

On examination, she was moderately built and nourished. There was no pallor, icterus, pedal edema, or palpable peripheral lymphadenopathy. There was resting tachycardia (pulse rate was 110/min) and the blood pressure was 130/80 mm Hg. Her systemic examination was normal with no palpable hepatosplenomegaly or thyromegaly. An ophthalmic evaluation was done as a part of workup for fever which showed bilateral posterior subcapsular cataract due to posterior uveitis (choroiditis patch) with no evidence of vasculitis.

Differentials of occult infections such as tuberculosis, infective endocarditis, and noninfectious inflammatory conditions such as sarcoidosis, connective tissue diseases, vasculitis, and occult malignancy such as lymphoma were kept. Since she had significant unintentional weight loss no change in appetite, and since she had a vague pain in the neck with tachycardia, a possibility of thyroiditis was also kept. She was investigated extensively [Table 1]. Since T4 was elevated and thyroid-stimulating hormone was low, a diagnosis of hyperthyroidism was made. The patient was started on

beta-blocker therapy and other symptomatic management. Since the thyroid gland was clinically not palpable and the computed tomography showed a normal thyroid, fine-needle aspiration cytology of the thyroid was deferred.

Since she had of complicated cataract due to posterior uveitis, she was started on corticosteroid eye drops, with which she had symptomatic relief. The patient was started on oral prednisolone at a dose of 25 mg/day for the management of sarcoidosis.

The patient responded well, with relief of fever, and within a few weeks, the patient had significant improvement in the general condition with a feeling of well-being. Her neck pain resolved. The heart rate was normal even after stopping the beta-blocker. Her thyroid functions normalized and she did not need antithyroid treatment in the form of surgery or radioiodine ablation, which also reiterated the fact that the thyroiditis may have been due to sarcoidosis.

Sarcoidosis is a multisystem, inflammatory disorder characterized by noncaseating granulomas that can infiltrate almost any organ, especially the lungs. Although pulmonary involvement is the most common, patients with sarcoidosis may present themselves to various specialties due to its varied manifestations.^[8]

Review of literature suggested that autoimmune thyroid disease such as hypothyroidism or Graves' hypothyroidism was associated with sarcoidosis. The significance of this case is that this patient had thyroiditis due to sarcoidosis which is extremely rare.

Vailati *et al.* reported 40 cases of sarcoid involvement of the thyroid gland, and 13 of whom presented clinically with hyperthyroidism due to Graves' hyperthyroidism.^[9] Our case was not Graves' disease; however, due to thyroiditis and antithyroid antibodies, titer was also normal meaning

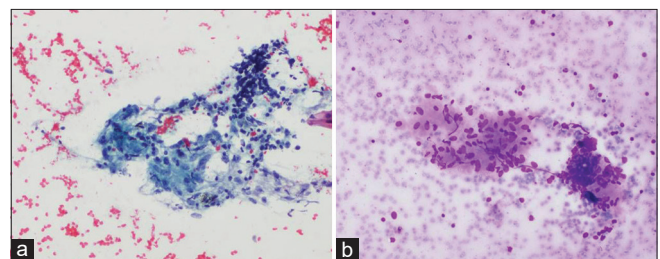


Figure 1: Pap (a) and Giemsa (b) stained FNA smears showing epithelioid cell granulomas along with few lymphocytes in the background. There is no necrosis

Table 1: Investigations

Parameter	Result
CBC, ESR, LFT, RFT	Normal
CXR	Normal
USG abdomen	Normal
Echocardiography	Normal
T4	14.36 µg/dL (5-12)
TSH	0.144 µIU/mL (0.4-4)
Radio-iodine uptake study	RAIU 1.92% at 6 h and 10.7% at 24 h which was low uptake suggestive of thyroiditis
Anti thyroperoxidase	<5
ANA, anti-ds DNA, ANCA	Negative
HIV ELISA	Nonreactive
CECT Chest	Multiple nonnecrotic pretracheal, precarinal, and subcarinal lymph nodes of around 2 cm size were present. The right apical region and right middle lobe had fibrotic opacities. There were no active lesions in the lung parenchyma. The thyroid was normal
Tuberculin test	Nonreactive
Serum ACE	32 U/L
Serum calcium and 24 h urinary calcium	Within normal limits
Endoscopic ultrasound	Multiple echogenic enlarged nodes seen in subcarinal and aortopulmonary window. Largest node was of size 3.1 cm × 1.5 cm in the subcarina
Fine needle aspiration from the node	Lymphoid tissue with epithelioid cell granulomas. There was no necrosis and stain for AFB was negative [Figure 1]. A diagnosis of sarcoidosis due to the presence of nonnecrotizing granulomas with nonreactive tuberculin test

CBC: Complete blood count, ESR: Erythrocyte sedimentation rate, LFT: Liver function test, RFT: Renal function test, CXR: Chest X-ray, USG: Ultrasonography, TSH: Thyroid-stimulating hormone, ACE: Angiotensin-converting enzyme, AFB: Acid-fast bacilli, RAIU: Radioactive iodine uptake, T4: Thyroxin

that this may be thyroiditis due to sarcoidosis *per se*. The clinical response to corticosteroids and that there was no need for antithyroid medication, surgery, or radioiodine ablation may also point toward this fact.

Sarcoidosis has been related with autoimmune diseases, especially with autoimmune thyroid disease, and some authors opine that thyroid function should be included in the initial assessment of patients with sarcoidosis, particularly women.^[10]

The increased prevalence of endocrine autoimmunity may be due to unregulated proinflammatory process.^[4,11]

The incidence of thyroid involvement in sarcoidosis is significantly higher as compared to those without the disease. Hence, in cases where the diagnosis of sarcoidosis is in doubt, as in areas where tuberculosis is very common and granulomas on tissue biopsy are not in itself diagnostic of sarcoidosis, this finding of thyroid dysfunction can add strength to the diagnosis of sarcoidosis.

The occurrence of thyroiditis due to sarcoidosis is a rare event, and there are only a few reports^[12] of hyperthyroid features due to sarcoidosis-related thyroiditis, to the best of our knowledge.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names

and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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