

areas is associated with an increased incidence of thyrotoxicosis, including Graves' disease(5).

The incidence of Graves' disease among children where parents have the disease is not known. In this family, two offsprings had autoimmune thyroid disease, one had Graves' disease and one had Hashimoto's thyroiditis an unusual cooccurrence. However, no data exists on the true prevalence of these diseases among married couples, and medical officers should be encouraged to report such occurrences to shed further light on the relation between genetic and environmental factors in the etiology of this disorder.

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Imaging in Adrenal Tuberculosis

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Tuberculosis (TB) of adrenal gland is a rare form of adrenalitis accounting for only less than 5% of cases. The chief clinical features include that of adrenal insufficiency like weakness, weight loss, hyperpigmentation, hypotension and gastrointestinal disorders.

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Enlarged adrenal gland and hypodense necrotic areas with ring enhancement are diagnostic feature on computed tomography study. We are reporting a similar case.

Case Report

A 14-year-old boy presented with multiple sinuses and fistulae in the axilla. On examination he showed signs of malnutrition with sparse hair, depigmentation of face and angular stomatitis. Few large firm matted and mobile lymph nodes were palpable in the neck and fistulae were seen in axilla. The liver was enlarged 3 cm and spleen 2 cm below the costal margin. Chest roentgenogram showed right apical fibrocavitary lesion. The total leukocyte count was 22,000 cells/mm³ with 55% lymphocytes and an ESR of 110 mm at 1 h (Westergren method). The sputum examination was positive for acid fast bacilli. Mantoux test using 1 TU PPD showed an induration of 16 mm at 48 h.

The patient was considered to have disseminated tuberculosis. In order to assess the liver, spleen and presence of abdominal lymph nodes, a CT study of abdomen was done. It showed an enlarged spleen with multiple hypodense areas within it. Both adrenals were enlarged and had irregular outline. Post contrast CT examination of adrenals showed a peripheral marginal enhancement and irregular hypodense areas within (Fig. 1). Fine needle aspiration of adrenals showed areas of caseation necrosis and tubercle formation. Adrenal function tests were done and showed depression of serum sodium and elevation of potassium levels. The serum cortisol level was low and ACTH level was high.

Discussion

Adrenal involvement in tuberculosis is usually secondary to pulmonary or abdominal tuberculous infection. Tarvinder *et al.*(1)

reviewed 14 cases of adrenal tuberculosis and found that in 8 cases there was evidence of active extra abdominal tuberculosis. Our case which had tubercular adrenal involvement also showed evidence of tubercular infection in lungs and spleen. Plain X-ray abdomen may show calcification above upper pole of kidneys. This was seen only in 4 cases in the series reported by others(2-4). In our case there was no evidence of any calcification. With imaging modalities like CT, tubercular adrenal enlargement can be diagnosed prior to its atrophy and calcification. CT Scan demonstrates hypodense necrotic areas with peripheral ring like enhancement on contrast administration(5,6). In our case CT study showed bilateral adrenal enlargement with irregular outline and heterogenous uptake with peripheral enhancement on contrast administration (Fig. 1).

CT appearance of adrenal TB can easily be differentiated from adrenal metastasis by

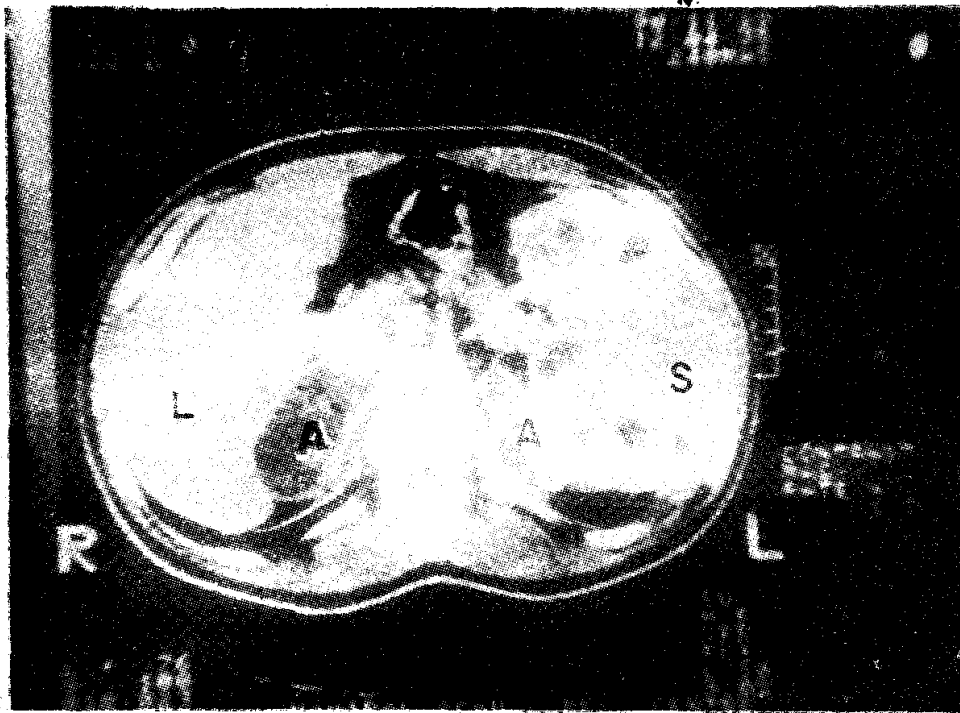


Fig. 1. Post contrast CT shows enlarged adrenals (A) with multiple hypodense areas within it. Peripheral marginal enhancement is seen. Multiple hypodense areas are seen within spleen (S) also.

the homogenous spherical enlargement of adrenals, invasion of adjacent structures, non-homogenous attenuation and a thick irregular enhancing rim. The involvement of adrenals in lymphoma is invariably associated with involvement of other abdominal organs. Solid calcified pheochromocytomas may mimick TB, but they show marked contrast enhancement. Associated urinary catecholamine and elevated vannilyl-mandelic acid (VMA) levels will confirm the diagnosis.

It is important to diagnose the cases of tubercular adrenalitis in their early stage of enlargement as institution of specific therapy at this stage make it possible to affect complete recovery of adrenals and obviate the need for a life-long hormonal supplementation.

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Acute Schistosomiasis in the Indian Subcontinent

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Schistosomiasis is a group of diseases caused by various species of blood flukes of the genus *Schistosoma*. About 200 million people in 73 countries of the world are affected(1). The disease is unknown in the Indian subcontinent except for a small endemic focus of *S. hematobium* in Gimvi village of Maharashtra(2). Acute schistosomia-

sis or Katayama fever is a clinical syndrome that occurs within three to six weeks after infection with *S. mansoni* or *S. japonicum*. Though the acute stage is self limiting, it is important to recognize this condition because if left untreated, the patient presents with complications of chronic schistosomiasis years later (e.g., decompensated liver either as periportal fibrosis (Symmer's fibrosis) leading on to cirrhosis and portal hypertension or malignancy of the liver.

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