jnm/ CASE REPORT

SPLENOMEGALY WITH UNIFORMLY DECREASED SPLENIC UPTAKE OF ^{99m}Tc-SULFUR COLLOID; A NEW OBSERVATION IN CHILDHOOD SARCOIDOSIS

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A uniform reduced splenic uptake of ^{99m}Tc-sulfur colloid was observed in a child with sarcoidosis, a pattern previously considered indicative of malignant process.

The diagnosis of sarcoidosis in the first two decades of life may pose a difficult problem, and of necessity, be a diagnosis of exclusion (*1*).

In a recent review of radiologic findings in childhood sarcoidosis, hepatomegaly, or splenomegaly was found to be the only initial physical finding in four of seven patients (*2*).

Recently a 10-year-old boy presented with hepatosplenomegaly and a liver-spleen scan showed uniformly decreased splenic activity with no bone marrow uptake, a pattern previously considered indicative of malignant infiltrative process (*3*).

CASE REPORT

A 10-year-old black boy was referred to North Carolina Memorial Hospital for evaluation of hepatosplenomegaly. His mother noted a progressive increase in his abdominal girth for 1 month. The boy experienced minimal right-sided abdominal pain while eating, not related to exercise. Otherwise, he was asymptomatic and pursued normal activities. Physical examination revealed a thin boy weighing 26 kg. He had many small cervical, axillary, and inguinal lymph nodes. The abdomen was distended, and the liver and spleen palpable.

A chest x-ray revealed bilateral pulmonary infiltrates with right paratracheal and minimal hilar adenopathy. The peripheral blood and bone marrow smears were normal. There was no hematologic evidence of hypersplenism. A tuberculin skin test was negative. Other laboratory tests, including sickle cell prep, serum calcium, and liver function tests were normal except for mild hypoalbuminemia and elevated gamma globulin. A bone survey was normal. Liver-spleen scan done with ^{99m}Tc-sulfide colloid showed hepatosplenomegaly with a diffuse decrease in splenic activity (Fig. 1).

Biopsy of the cervical lymph nodes revealed noncaseous epithelioid-cell granulomata compatible with sarcoidosis. The patient's clinical condition remained unchanged, and he was discharged on steroids.

DISCUSSION

The pathological appearance of splenic involvement in sarcoidosis has been described by Kay (*4*). Although some of the splenic enlargement could be explained on the basis of congestion, an actual replacement of splenic tissue by granulomata was considered to be the primary cause of splenomegaly. This replacement was noted to be either uniform or irregular, with intervening areas of normal splenic pulp. On occasion, the changes were too diffuse to be appreciated grossly; some cases demonstrated fibrosis within the pulp.

Butt and Kuhl described massive splenomegaly with multiple intrinsic round defects in an adult with sarcoidosis (*5*). The defects were assumed to represent conglomerate masses of sarcoid tubercles. In the present case, there is hepatosplenomegaly with significantly reduced activity in the spleen and no

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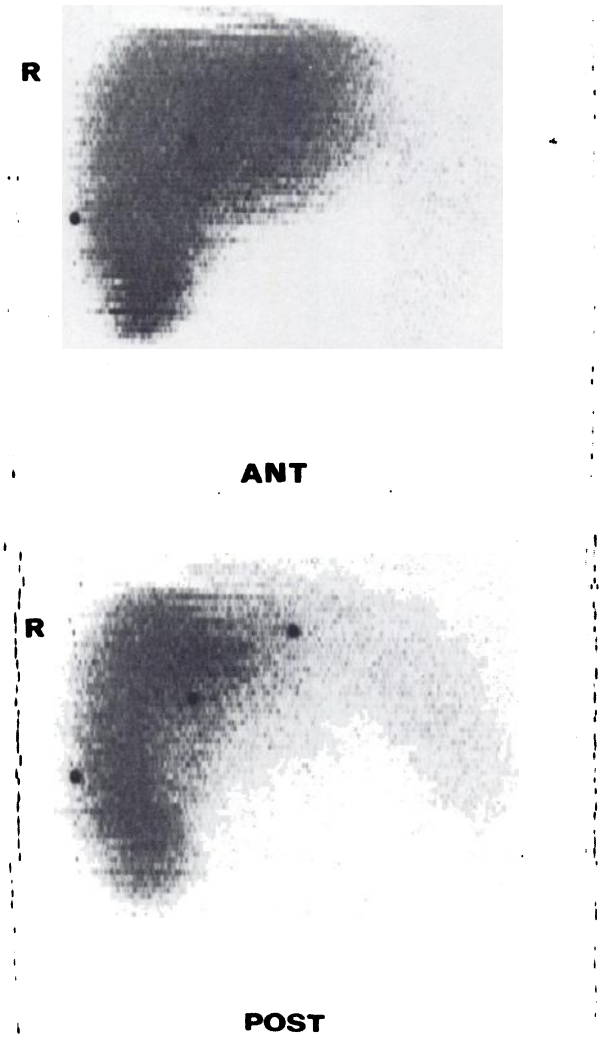

FIG. 1. Anterior and posterior liver-spleen scan of 10-year-old boy with sarcoidosis. There is hepatosplenomegaly with uniform decreased splenic uptake.

bone marrow uptake. The distribution of activity is uniform in each organ without evidence of intrinsic defect. The result of the spleen-liver scan shown here suggests that another pattern may be observed in sarcoidosis as one might expect from the varied pathological changes.

The pattern of decreased splenic uptake (regardless of size) and without increased bone marrow uptake has been reported by Bekerman and Gottschalk (*3*). Nineteen of 21 cases represented malignant processes, and no case of sarcoidosis was included in this group. The present case indicates that this pattern may also be produced by sarcoidosis.

The liver spleen scan in sarcoidosis may show an evenly reduced splenic uptake in an enlarged spleen instead of focal intrasplenic defects.

This pattern would be expected from a uniform replacement of splenic tissue by granulomata as demonstrated by Kay. Not only malignant processes, but also sarcoidosis, should be included in the differential diagnosis of such a scan appearance.

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