

HODGKIN'S DISEASE TERMINATING IN ACUTE LEUKEMIA

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A patient with Hodgkin's disease, whose disease terminated 18 months after diagnosis with the almost explosive appearance of acute myelocytic leukemia, is described. The unusual relationship between Hodgkin's disease and acute leukemia is briefly discussed.

THE OCCURRENCE OF A LEUKEMIC PHASE IS a rare finding in Hodgkin's disease. Only 6 cases of acute leukemia in patients with proven Hodgkin's disease have been reported in the American literature^{5, 6} and one case in the European literature.³

The purpose of this communication is to report an additional case and to discuss the possible relationship between the 2 conditions, as well as the role of radiation therapy in the development of the acute leukemia.

CASE REPORT

A 60-year-old Filipino man was admitted to the Veterans Administration Hospital for the third time in September 1968; he died within 4 days.

His symptoms began in November 1967, with the onset of fever, night sweats, anorexia, and weight loss. In January 1968, 2 enlarged cervical and supraclavicular nodes were removed. The histologic appearance was compatible with a diagnosis of Hodgkin's disease, lymphohistiocytic type (Fig. 1).

The patient received cobalt supervoltage therapy with a dose of 4,100 rads to the cervical region and 3,000 rads to the medias-

tinum. He was asymptomatic for only 2 weeks following therapy. In April 1968, the lesions of herpes zoster appeared on the left side of the abdomen, and the patient was admitted for the first time to the Miami VAH. On physical examination, he was emaciated but in no acute distress. The only pertinent physical findings were the aforementioned herpetic lesions and a liver enlarged to 7 cm below the costal margin. The hematocrit was 28% and the white blood cell count was 4,750 per mm³. The sternal marrow was hypocellular with normal distribution of marrow elements. Coombs' test was positive. Liver biopsy was normal. Lymphangiography showed involvement of the retroperitoneal lymph nodes.

Because of the anemia, anorexia, and fever, therapy with prednisone, 60 mg daily, was instituted. The hematocrit rose 8%, and Coombs' test became negative. The patient began to gain weight and the fever subsided initially. In May, he received 5 mg of Velban (vinblastine sulfate, Lilly), and, in June, a new course of cobalt therapy was begun. He received 3,000 rads to the para-aortic area and 3,000 rads to the mid-plane of the pelvis. His symptoms persisted.

In August, the patient was readmitted to the hospital with fever and increasing weakness. A new left axillary node, 2 cm in diameter, was palpable. Pancytopenia was present. Following therapy with isoniazide and blood transfusions, his symptoms subsided and he was discharged.

His final admission was prompted once more by increasing weakness and fever of 3 days' duration. He was acutely ill, and bilateral pulmonary consolidation was present. New shotty nodes had appeared in the right axilla and both femoral areas. The liver was palpable 6 cm below the costal margin. The hematocrit was 24% and the white cell count was 6400 mm³. Immature granulocytes were present and occasional Auer rods were seen in these cells. Sputum and blood cultures grew

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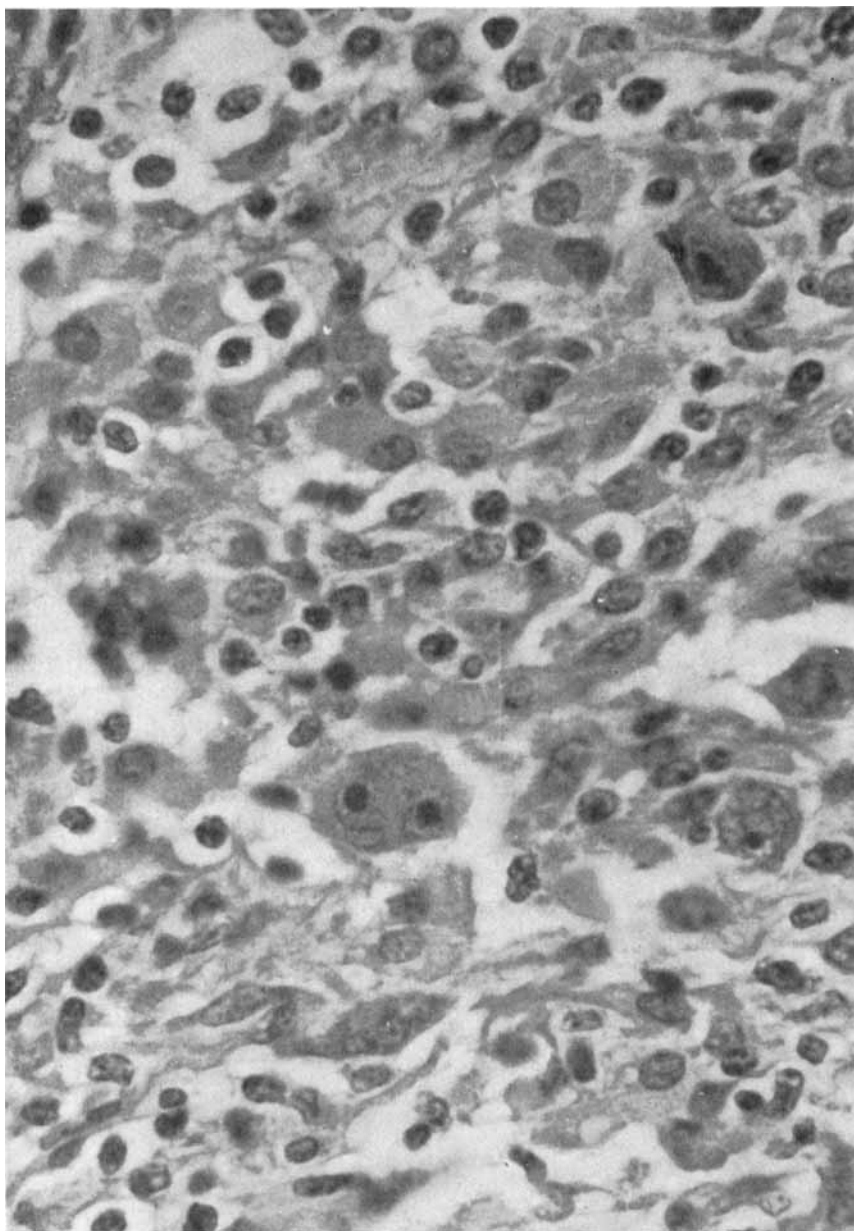


FIG. 1. Section of lymph node showing typical Sternberg-Reed cells and neoplastic and nonneoplastic histiocytes surrounded by mature well-differentiated lymphocytes (H and E, $\times 850$).

out *Escherichia coli* in spite of antibiotic therapy. Fever persisted throughout the hospital course. On the day he died, 4 days after admission, the peripheral leukocyte count rose abruptly to 130,000 mm^3 with 60% blasts, some of which had monocytoid features (Fig. 2). Auer rods were again noted in some. A diagnosis of acute myelocytic leukemia was made.

Necropsy findings: Gross examination revealed moderate enlargement of both the thoracic and abdominal nodes. The spleen

weighed 250 g and the liver 1400 g. There was an effusion of 200 cc in the right pleural cavity. The fluid was light yellow in color. Patchy necrotizing bronchopneumonia was present in both lower lobes. *E. coli* was cultured from these areas. The vertebral marrow was pale and soft.

The normal architecture of every node was replaced by either undifferentiated cells identified as immature granulocytes or a proliferation composed of atypical histiocytes, Sternberg-Reed cells, malignant histiocytes,

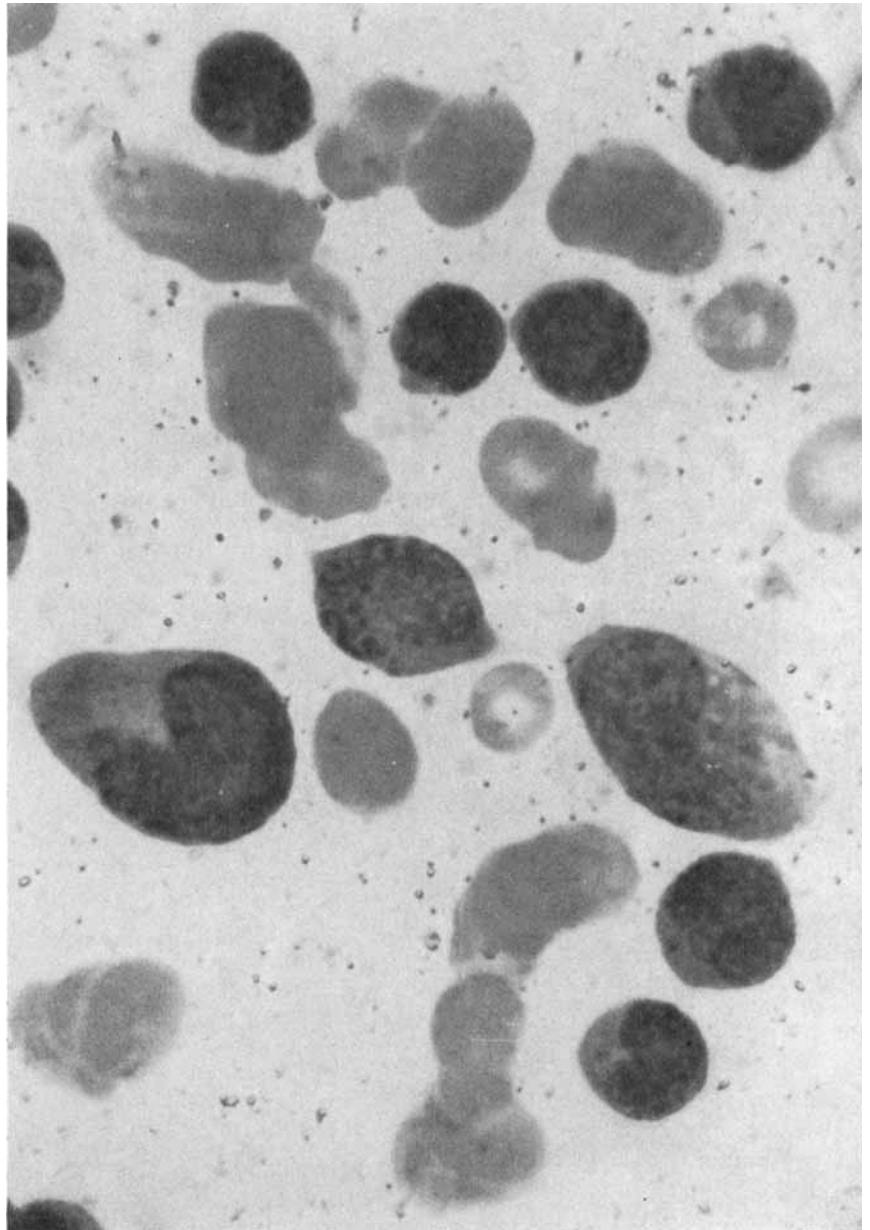
and lymphocytes (Fig. 3). The acute leukemic picture predominated in the liver and spleen, although there were typical areas of Hodgkin's involvement. The cellular infiltration in the bone marrow was composed mainly of undifferentiated cells similar to those of the peripheral blood. Infiltration by both acute leukemia and Hodgkin's disease was present in the lungs and heart. Acute leukemic infiltrates were also found in the large intestine, pancreas, kidneys, prostate gland, adrenals, thyroid, and parathyroid glands.

DISCUSSION

A leukemic blood picture is an unusual occurrence in Hodgkin's disease.⁸ Some authors believe that existence of the 2 diseases in the same patient represents only chance occurrence of the 2 entities,^{2, 4} misdiagnosed cases of reticulum cell sarcoma, or lymphosarcoma⁶ where a leukemic phase is not unusual.^{1, 7, 9}

Ezdinli and coworkers⁵ reported 3 cases of myelocytic leukemia, one of which was acute,

FIG. 2. Peripheral blood smear containing 60% blasts. Some of these immature cells had deep indentation of the nucleus. Lack of nuclear segmentation, pronounced condensation of the chromatin and typical Auer bodies were observed in some of these immature cells (H and E, $\times 3000$).



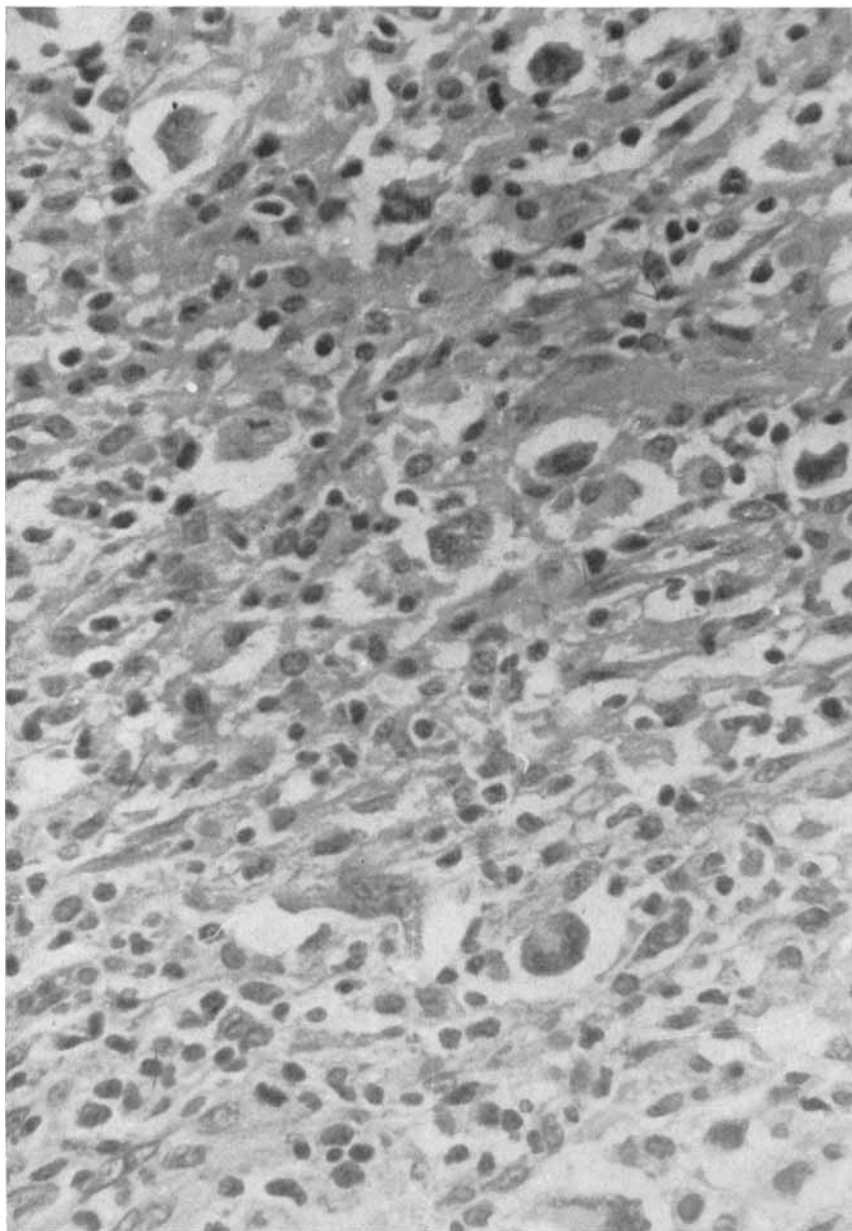


FIG. 3. Postmortem lymph node showing complete replacement of the normal architecture by either undifferentiated cells which were identified as immature granulocytes from the peripheral blood and bone marrow smears, and/or a proliferation of atypical histiocytes, Sternberg-Reed cells and malignant histiocytes and fewer mature lymphocytes (H and E, $\times 850$).

among a population of patients with Hodgkin's disease. They found that the latent period between the onset of radiation therapy and the development of leukemia in their cases and those in the literature was 7 years. The apparent recent increase in the incidence of acute leukemia in Hodgkin's disease was postulated to be related to the higher doses of radiation therapy currently employed. Chromosomal abnormalities usually associated with leukemia were present in those cases with associated leukemia, but not in cases of

Hodgkin's disease without concomitant leukemia. It was the opinion of these authors that the risk of developing leukemia is relatively small when compared to the improved management of Hodgkin's disease with super-voltage therapy.

In our patient, radiation therapy had been instituted only 9 months prior to the onset of the acute leukemic process. Therefore, it is difficult to implicate it as a contributory factor in the development of acute leukemia in this patient.

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