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Letter to the Editor

Liver Replacement with Hodgkin's Disease, Lymphocyte-Depletion Type, with an Uninvolved Spleen

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IT HAS been considered that in Hodgkin's disease, the liver becomes involved only if the spleen is also affected [1–4]. This report describes a teenager who died of extensive intra-abdominal disease and replacement of normal liver tissue by Hodgkin's disease. Surprisingly, autopsy failed to disclose splenic involvement, even though splenectomy was not possible because the organ was totally encapsulated by perisplenic tumor.

CASE REPORT

Clinical data

The patient was a 17-yr-old boy whose illness lasted 23 months.

Initially, he had cervical adenopathy and was considered to have infectious mononucleosis. He recovered completely with symptomatic treatment. Two months later, he developed severe dyspnea and fever, and a chest X-ray film revealed a large mediastinal mass. Tissue obtained during a mediastinoscopy was labeled neuroblastoma. The patient was then referred to the M.D. Anderson Hospital. Slides were considered to be consistent with a lymphoma; a subtype was not identified because of deficient preparation of the biopsy material. The patient's work-up failed to reveal disease below the diaphragm.

A combination chemotherapy program consisting of cyclophosphamide, adriamycin, vincristine, prednisone and bleomycin was begun. After 6 courses, the patient was considered to be in complete remission and received radiation therapy to the neck and mediastinum. Two months following the completion of the radiotherapy, he was found to have an elevated alkaline phosphate level and a liver scan showed uneven uptake in the right lobe; however, a liver biopsy did not disclose any abnormalities. Chemotherapy was reinstituted without bleomycin. After a total dose of 510 mg/M^2 of adriamycin was reached, maintenance was continued with the remaining three agents.

The patient was hospitalized after the eighth course of maintenance chemotherapy because of myelosuppression and fever. He gave a history of generalized pruritus of 6 months' duration and of epigastric discomfort for several weeks. Physical examination showed no peripheral adenopathy, hepatomegaly or masses; the splenic tip was palpable. A liver–spleen scan showed splenomegaly, with uneven uptake of the isotope as well as a normal sized liver with a large cold area. A total body gallium scan had abnormal uptake in the upper abdomen. Again, results of the liver biopsy were normal. There was no mediastinal widening in the chest X-ray film.

With evidence of active disease, the patient's chemotherapy was switched to MOPP (nitrogen mustard, vincristine, procarbazine, prednisone) plus low dose bleomycin. The abdominal pain disappeared and the pruritus improved. A laparotomy was performed because the patient had persistent myelosuppression without bone marrow infiltration by tumor cells and because he continued to be febrile; in addition, the precise histologic type of his lymphoma had not been established. Results indicated massive tumor

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in the retroperitoneum and liver with complete replacement of the left lobe and multiple neoplastic nodules in the right lobe. The spleen was technically impossible to remove since it was completely encapsulated by tumor. Pathologic diagnosis was Hodgkin's disease, lymphocyte-depletion type.

The patient's condition steadily worsened following surgery. He had an increasing amount of ascitic fluid which turned out to be an exudate rich in neoplastic cells. He continued to be febrile and developed liver failure. There was slight, short-term improvement following the administration of vinblastine plus BCNU, but the patient died of Klebsiella septicemia while myelosuppressed.

PATHOLOGY

Gross findings

The pertinent pathological findings were in the liver, spleen, lymph nodes, peritoneum and soft tissues of the retroperitoneum and mesentery. The lymph nodes of the main chains (cervical, axillary, mediastinal, paraaortic, iliac and inguinal) were enlarged and replaced by necrotic white soft tissue.

The retroperitoneum and root of the mesentery were involved with a large mass composed of multiple confluent nodules. This mass extended from the diaphragm to the bifurcation of the aorta. On the left, it encased the tail of the pancreas and the spleen. On the right, it involved the pylorus and lesser omentum and extended into the left lobe of the liver.

The liver weighed 1400 g. Several nodules were on the external surface of the right lobe. On cross section, the left lobe was completely replaced by a mass of white soft tissue which was continuous with the tumor in the lesser omentum. The right lobe was congested and the surface nodules previously described did not invade the liver parenchyma.

The spleen, which weighed 200 g, was surrounded by an extension of the mass from the left retroperitoneum. It was cross sectioned at 3 mm intervals; the cut surfaces were dark red and no tumor nodules were present. Nine sections were taken for microscopic examination.

Microscopic findings

The tumor in the liver (Fig. 1), lymph nodes and retroperitoneum consisted of a pleomorphic infiltrate containing numerous Reed–Sternberg cells, neoplastic mononuclear reticulum cells, and numerous multinucleated giant cells with a few plasma cells, (Fig. 2) diagnostic of Hodgkin's disease, lymphocyte-depletion type. There was extensive necrosis and hemorrhage. The spleen exhibited congestion, lymphoid depletion, and areas of extra-medullary hematopoiesis (Fig. 3); no Hodgkin's disease was present. The bone marrow was hypocellular and no Hodgkin's disease was seen in sections from the vertebral bodies.

Autopsy, therefore, confirmed surgical findings. Surprisingly, however, once the spleen was freed from surrounding tumor, it was found to be microscopically and histologically normal.

DISCUSSION

Liver involvement in Hodgkin's disease usually reflects disseminated disease involving both intra-abdominal lymph nodes and spleen. In several laparotomy series, which include a total of 282 patients with Hodgkin's disease, 21 were found to have abnormal liver biopsies; in all of these patients the spleen was histologically involved [5–8].

The liver was involved in 8 of 13 patients with lymphocyte-depletion type of Hodgkin's disease described by Neiman *et al.* [9]. All had autopsy proven splenic disease as well.

There are isolated reports of liver involvement by Hodgkin's disease in the presence of a histologically normal spleen [10, 11]. The report of Ripault and Dumont however, lacks details as to how extensively was the spleen examined.

CONCLUSION

The case reported here alerts the clinician to the possibility that massive intra-abdominal tumor, with liver replacement by Hodgkin's disease, may occur in the presence of a normal sized, histologically uninvolved spleen; lymphocyte-depletion histology increases the probability of disseminated disease.

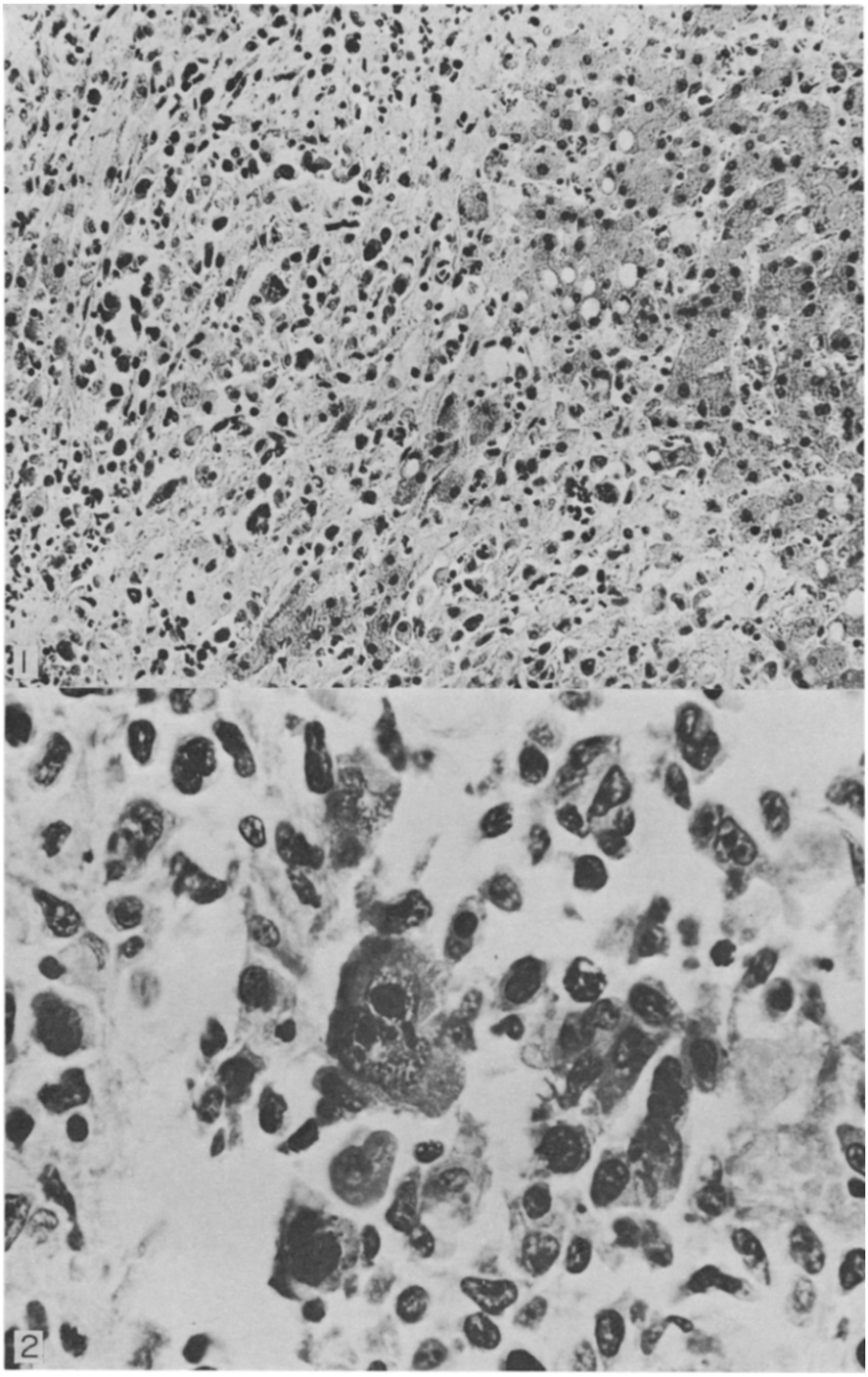

Fig. 1. *Hodgkin's disease involving liver* (*H* & *E* × 115).

Fig. 2. *Reed–Sternberg cells and pleomorphic histiocytes* (*H* & *E* × 400).

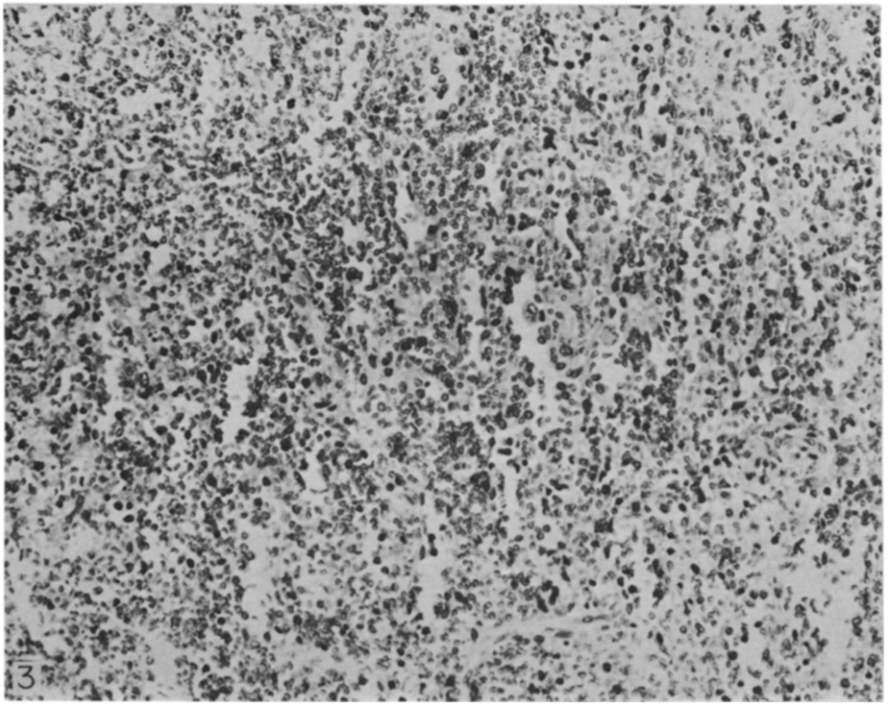

Fig. 3. Spleen showing congestion and lymphoid depletion (H & E × 115).

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