Splenic non-Hodgkin's lymphoma without organomegaly: occult presentation with fatal course and post-mortem diagnosis

Russell P. Gollard,[1] Diana Garcia[2]

[1]Cancer and Blood Specialists of Nevada, Henderson, NV, USA
[2]Associated Pathologists, Chartered, Las Vegas, NV, USA

Abstract

Splenic lymphoma without splenomegaly is uncommon. We report the case of a 68-year-old female who presented with fulminant B symptoms and thrombocytopenia, only to be found to have micronodular large B-cell lymphoma of the spleen post-mortem. Diagnosis of this rare entity remains difficult and overall prognosis is poor.

Introduction

Both Hodgkin's disease and non-Hodgkin's lymphoma can present with overwhelming B symptoms and pancytopenia can be associated with either disease, particularly when there is involvement of the bone marrow. Certain entities are difficult to diagnose because of lack of organomegaly, including intravascular non-Hodgkin's lymphoma. Splenic lymphoma is usually associated with organomegaly; in the uncommon micronodular non-Hodgkin's B-cell lymphoma of the spleen, neither splenic organomegaly nor obvious extra-splenic systemic involvement is seen.[1]

Case Report

The patient is a 68-year-old female who presented with mild thrombocytopenia and anemia. Specifically, her platelet count was 114, white blood cell count was normal at 4.5, hemoglobin 10, hematocrit 30. She also had high serum ferritin. Her chief complaint involved fatigue and lethargy. She had lost five pounds in weight. She was also afflicted with diabetes and hypertension. The patient had a computerized tomography (CT) scan of the chest, abdomen, and pelvis, which initially showed a small pericardial effusion and small pleural effusions. Subsequently, the patient experienced fevers, chills, and night sweats. Two separate bone marrow aspirates and biopsies were completed. These were both negative. There was some megakaryocyte hyperplasia in the bone marrow biopsy; hence the diagnosis of idiopathic thrombocytopenic purpura (ITP) was made as the platelet count progressively ranged as low as 10. Antiplatelet antibodies were negative. Fibrinogen was elevated, as was the D-dimer, consistent with a low-grade disseminated intravascular coagulation process. No schistocytes or spherocytes were seen on the peripheral smear, although the lactate dehydrogenase (LDH) had ranged between 800-2000 during the entire disease process. Haptoglobin always fell within the normal range. Over a period of four months, she had transient responses to steroids, IVIG therapy, and finally was placed on Rituxan. The spleen had never been enlarged, although the liver had been measured at 7 and 18.2 cm in length without focal lesions.

Because she continued to worsen, the patient was taken to lapartotomy for a splenectomy. The spleen had never been enlarged, nor had it shown any focal lesions on CT scans. At the time of surgery, the splenic cut surface was found to be nodular, with white sclerotic nodules ranging from <1 mm to 0.25 cm (Figure 1). Dense infiltrates of mononuclear cells were seen, consistent with a large B-cell lymphoma (Figure 2A and B). Immunostaining was positive for lymphomatoid cells expressing CD20 and CD79a (Figure 3A and B). The pathology was consistent with a micronodular variant of diffuse large B-cell lymphoma of the spleen.

Discussion

Splenic micronodular large B-cell lymphoma is recognized now as a distinct entity, diagnosed only with great difficulty.[1-4] Splenic lymphomas usually are indolent when they are splenic lymphomas with villous lymphocytes; large-cell lymphomas occurring in microscopic nodules within the spleen can exert, as in this case, a variety of symptoms on the individual, causing a gradual physiologic decline. T cell/histiocyte-rich large B-cell lymphomas of the spleen can present with a similar micronodular pattern, but this type of lymphoma is characterized by a few scattered neoplastic large B cells within a proliferation of non-neoplastic T lymphocytes and histiocytes. Our case was predominantly one with large B

Figure 1. Macroscopic view of the spleen showing a nodular surface, the white sclerotic nodules ranging from <1 mm to 0.25 cm in size.

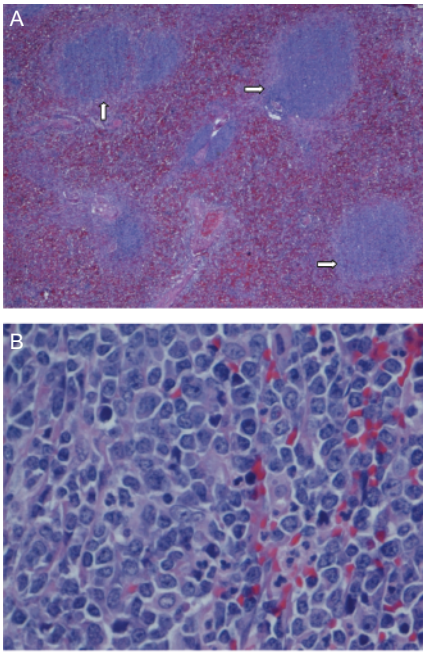

Figure 2. (A) Low-power microscopic view of the spleen illustrating nodular infiltrates of mononuclear cells (arrows), consistent with a large B-cell lymphoma (hematoxylin and eosin stain; magnification 20X). (B) High-power microscopic view of the spleen demonstrating diffuse infiltrate of neoplastic large B-cells (hematoxylin and eosin stain; magnification 400X).

Correspondence: Russell P. Gollard, Cancer and Blood Specialists of Nevada, 58 N. Pecos Road, Henderson, NV 89074, USA.
E-mail: rgollard@hotmail.com

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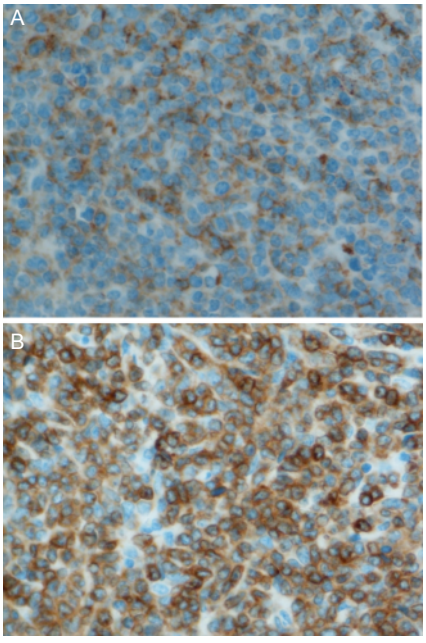

Figure 3. High-power microscopic view of the spleen demonstrating positive CD20 (A) and CD79a (B) immunostains for B lymphocytes (magnification 400X).

cells within the nodules, without a significant small-cell component and only occasionally admixed T cells, as highlighted by the CD3 immunostain.[1]

The primary problem remains the diagnosis. Perhaps early dynamic diagnostic imaging (i.e. PET scanning) will provide some hint of the localization of the problem, and thus allow for effective treatment. Splenic biopsy in a thrombocytopenic patient without localizing symptoms is ill-advised. Occasionally, the community oncologist is presented with a patient who defies diagnosis, although one is almost certain there is either an occult malignancy or an occult infection. These patients may have disabling B symptoms, cytopenias, non-specific organ dysfunction, and a variety of other non-specific signs and symptoms. Exhaustive searches for malignancies, infections, and collagen vascular disease are expensive and fruitless. Often patients are diagnosed only at necropsy. Splenic involvement with lymphoma usually occurs with at least some enlargement of the spleen. Our patient gradually declined over a period of four months and was never able to have an outpatient PET scan. Certain uncommon entities such as lymphocyte-depleted Hodgkin's disease or true intravascular non-Hodgkin's lymphomas can cause such disabling B symptoms and gradual decline, and diagnosis is made usually at autopsy.[5-9] Because of the relative rarity of autopsies outside of the academic setting, combined with the difficulty of diagnosis while the patient is alive, these entities are, in all likelihood, underdiagnosed.

References

1. Dogan A, Burke JS, Goteri G, et al. Micronodular T-cell/histiocyte-rich large B-cell lymphoma of the spleen: histology, immunophenotype and differential diagnosis. Am J Surg Pathol 2003;27:903-11.
2. Kan E, Levy I, Benharroch D. Splenic micronodular T-cell/histiocyte-rich large B-cell lymphoma. Ann Diagn Pathol 2008;12:290-2, Epub Sep 14, 2007.
3. Kashimura M, Noro M, Akikusa B, et al. Primary splenic diffuse large B-cell lymphoma manifesting in red pulp. Virchows Arch 2008;453:501-9.
4. Wang SA, Olson N, Zukerberg L, et al. Splenic marginal zone lymphoma with micronodular T-cell rich B-cell lymphoma. Am J Surg Pathol 2006;30:128-32.
5. Chapin JE, Davis LE, Kornfeld M, et al. Neurologic manifestations of intravascular lymphomatosis. Acta Neurol Scand 1995; 91:494-9.
6. Ferreri AJ, Campo E, Seymour JF, et al. Intravascular lymphoma: clinical presentation, natural history, management and prognostic factors in a series of 38 cases, with special emphasis on the "cutaneous variant". Br J Haematol 2004;127:176-83.
7. Kini U, Alexander B, Correa M. Malignant lymphoma without lymphadenopathy. J Assoc Physicians India 2008;56:383-5.
8. Murase T, Yamaguchi M, Suzuki R, et al. Intravascular large B-cell lymphoma (IVLBCL): a clinicopathologic study of 96 cases with special reference to the immunophenotypic heterogeneity of CD5. Blood 2007;109:478-85.
9. Shimada K, Matsue K, Yamamoto K, et al. Retrospective analysis of intravascular large B-cell lymphoma treated with rituximab-containing chemotherapy as reported by the IVL study group in Japan. J Clin Oncol 2008;26:3189-95.