Pediatric Hematology and Oncology, 31:369–371, 2014

ISSN: 0888-0018 print / 1521-0669 online
DOI: 10.3109/08880018.2013.825682

informa
healthcare

LETTER

Lymphocyte Depleted Hodgkin Lymphoma with Common Variable Immunodeficiency

Meriban Karadogan,[1] Nail Yologlu,[2] Ugur Demirsoy,[3] Metin Aydogan,[2] Cengiz Ercin,[4] and Funda Corapcioglu[1]

[1]Department of Pediatric Oncology, Kocaeli University, Kocaeli, Turkey; [2]Department of Pediatric Allergy and Immunology, Kocaeli University, Kocaeli, Turkey; [3]Department of Pediatric Hematology, Kocaeli University, Kocaeli, Turkey; [4]Department of Pathology, Kocaeli University, Kocaeli, Turkey

Dear Editor, we read Aghamohammadi et al.'s report [1] with deep interest. Common variable immunodeficiency (CVID) is a heterogeneous group of disorders characterized by deficient antibody synthesis. It manifests as recurrent bacterial respiratory infections and an increased incidence of neoplasms—particularly lymphomas [2, 3]. Herein, we report a clinical case of CVID with Hodgkin lymphoma (HL; unexpectedly, lymphocyte depleted type) as a secondary complication.

Our patient, who had several severe respiratory system infections, was first evaluated in our clinic when she was 8 years old. She had bronchiectasic areas on both lungs. Her blood count was normal except mild thrombocytopenia. Immunological investigations showed hypogammaglobulinemia. There was no immunological response to pneumococcal polysaccharides. She was diagnosed with CVID and started to obtain IVIG (500 mg/kg for every 3 weeks) and that decreased pneumonia attacks to two per year afterwards. She recently, at the age of 16 years, presented with fever, fatigue, and cough. Physical examination showed hepatosplenomegaly and high fever (39.5°C). Blood count and biochemical tests were in normal ranges at first presentation. There was infiltration consistent with pneumonia on the chest X-ray. Wide spectrum antibiotics were initiated, but despite continuing antibiotic treatment for 15 days, high fever persisted. Computed tomography of thorax and abdominal magnetic resonance imaging were performed on the second week of hospitalization, and they revealed hepatosplenomegaly but no prominent lymphadenopathy. There was no positive microbiological documentation in blood, urine, and bronchoalveolar lavage material. ELISA test for HIV and Quantiferon test for tuberculosis were both negative, but Epstein-Barr virus polymerase chain reaction (EBV-PCR) was positive (144000/mm^3 copies). Her clinical condition deteriorated progressively, she developed pancytopenia, and bone marrow aspiration showed neither malignant cell infiltration nor obvious hemophagocytosis. Bone marrow trephine biopsy revealed diffuse HL infiltration, lymphocyte-depleted subtype (Figure 1). Reed Sternberg cells were stained positive for CD30, EBV, and fascin but negative for CD15. There was no doubt within

Received 30 May 2013; accepted 12 July 2013.
Address correspondence to Dr Ugur Demirsoy, Department of Pediatric Hematology, Kocaeli University, Kocaeli, Turkey. E-mail: udemirsoy@yahoo.com

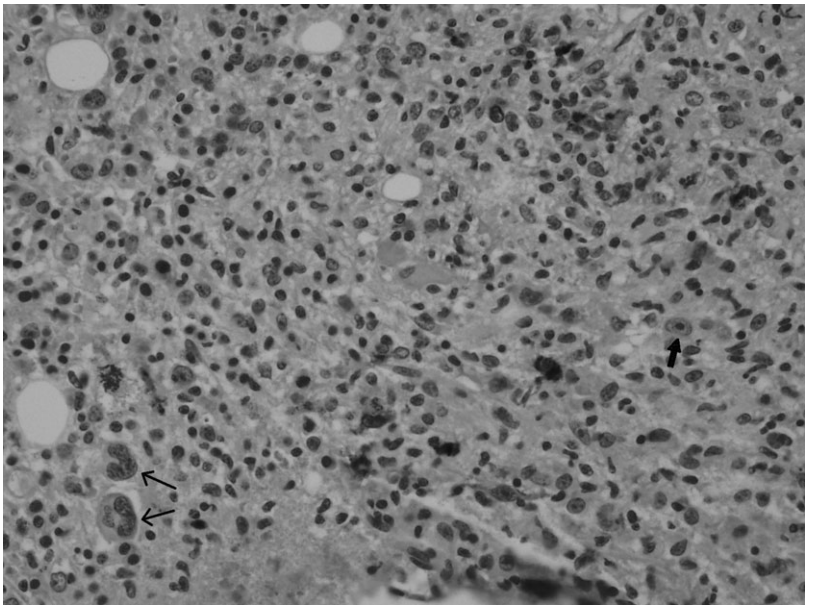

FIGURE 1 Bone marrow trephine biopsy: Hodgkin lymphoma bone marrow infiltration on a background of increased reticulin fibers (+3/3) and mixed cellular infiltrate, binucleated Reed Sternberg cells (thin arrows) and mononuclear variant Reed Sternberg cell (thick arrow).

the bone marrow biopsy pathology result, so we did not consider ALCL (anaplastic large-cell lymphoma) or EBV infection-related lymphoproliferative disease.

Chemotherapy protocol (ABVD: adriamycin 25 mg/m^2, bleomycin 10 mg/m^2, vincristin 1.5 mg/m^2, dacarbazine 375 mg/m^2) was started. At the end of the chemotherapy course, she developed tachypnea, tachycardia, and died as a consequence of acute respiratory distress syndrome (ARDS)-like state. We postulated the cause as an infectious agent that we couldn't document.

Non-HL and HL cases, except lymphocyte depleted subtype, are well documented in several studies [4, 5]. To our knowledge, mixed cellular type HL is the expected subtype as stated in Aghamohammadi et al.'s report [1]. Lymphocyte depleted HL is reported in HIV(+) patients [6]. The noteworthy points of our case are it is lymphocyte depleted subtype HL and also presented extranodally with hepatic, splenic, and bone marrow involvement. In a clinicopathological analysis [7] where 28 lymphocyte depleted HL patients were compared with 129 classical HL patients, it is strikingly noted that lymphocyte depleted group showed more advanced stages (stage 3/4:64% vs. 30%) and a higher rate of extranodal involvement (50% vs. 8%). We did not have enough time to observe the outcome of chemotherapy in our patient but Karube et al. [7] showed lower success rate with ABVD treatment compared with hybrid treatment protocols.

In conclusion, we want to emphasize the diagnosis of extranodal presentation of lymphocyte depleted HL whenever a possible malignancy is considered in a CVID patient even if the patient doesn't have lymphadenopathy.

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

REFERENCES

[1] Aghamohammadi A, Rezaei N, Gharagozlou M, et al. Hodgkin lymphoma in two siblings with common variable immunodeficiency. *Pediatr Hematol Oncol.* 2007;24:337–342.
[2] Blanco-Quirós A, Solís-Sánchez P, Garrote-Adrados JA, Arranz-Sanz E. Common variable immunodeficiency. Old questions are getting clearer. *Allergol Immunopathol.* 2006;34:263–275.
[3] Glocker E, Ehl S, Grimbacher B. Common variable immunodeficiency in children. *Curr Opin Pediatr.* 2007;19:685–692.
[4] Hermaszewski RA, Webster ADB. Primary hypogammaglobulinemia: a survey of clinical manifestations and complications. *Q J Med.* 1993;86:31–42.
[5] Mellemkjaer L, Hammarstrom L, Andersen V, et al. Cancer risk among patients with IgA deficiency or common variable immunodeficiency and their relatives: a combined Danish and Swedish study. *Clin Exp Immunol.* 2002;130:495–500.
[6] Thompson LD, Fisher SI, Chu WS, et al. HIV-associated Hodgkin lymphoma: a clinicopathologic and immunophenotypic study of 45 cases. *Am J Clin Pathol.* 2004;121:727–738.
[7] Karube K, Niino D, Kimura Y, Ohshima K. Classical Hodgkin lymphoma, lymphocyte depleted type: clinicopathological analysis and prognostic comparison with other types of classical Hodgkin lymphoma. *Pathol Res Pract.* 2013;209(4):201–207.