International Journal of Medicine & Health Research

www.advancejournals.org
Open Access Scientific Publisher

Case Study

HODGKIN'S DISEASE VARIANT OF RICHTER'S SYNDROME: A CASE REPORT WITH REVIEW OF THE LITERATURE

Maaroua Neji[1], Hafid Zahid[1], Jean Uwingabiye[1], Anas Yahyaoui[1], Mohamed Allaoui[2], Rachid Hadef[1], Mohamed Oukabli[2], Nezha Messaoudi[1]

[1]Department of Hematology, Military Instruction Hospital Mohammed V, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco

[2]Departement of Anatomopathology, Military Instruction Hospital Mohammed V, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco

Correspondence should be addressed to **Maaroua Neji**

Received July 11, 2017; Accepted August 08, 2017; Published September 21, 2017;

Cite This Article: Neji, M., Zahid, H., Uwingabiye, J., Yahyaoui, A., Allaoui, M., Hadef, R., Oukabli, M., Messaoudi, N. (2017). Hodgkin's Disease Variant of Richter's Syndrome: A case report with review of the literature. International Journal of Medicine & Health Research, 3(1). 1-3

ABSTRACT

The transformation chronic lymphocytic leukemia (CLL) into Richter syndrome represents aggressive clinical evolution of CLL. In most cases, this transformation corresponds to diffuse large B-cell lymphoma, but in very rare cases it can lead to Hodgkin's Disease Variant of Richter's Syndrome. We report a case of CLL transformed into Hodgkin's disease type of Richter's Syndrome in a 70-year-old male patient. Microscopic examination showed the presence of large tumor cells with the morphological and immunophenotypic features in favor of classical Hodgkin and Reed-Sternberg cells. The transformation of CLL into Hodgkin's disease poses a problem of histogenetic diagnosis. According to the literature, the clonal relationship between CLL and Hodgkin's disease is likely with prognostic value. Two forms of Hodgkin's Disease Variant of Richter's Syndrome are described with different prognoses: a form that corresponds to a true transformation of the CLL into a Hodgkin's disease, a poor prognosis and a second form that corresponds to the co-existence of CLL and Hodgkin's disease with better prognosis.

KEY WORDS: Chronic lymphocytic leukemia; Hodgkin's disease; Richter syndrome transformation

INTRODUCTION

Chronic lymphocytic leukemia (CLL) is a chronic lymphoid hemopathy defined by accumulation of monoclonal B-cell lymphocytosis in the blood, bone marrow and secondary lymphoid organs. In the most cases, it has a chronic course. In 3 to 10% of cases, there is a transformation into Richter syndrome, which most often corresponds to a transformation into diffuse large B-cell lymphoma.The transformation into Hodgkin's disease is observed In in 0.5 to 2.3% of cases [1].

The authors report a particular case of CLL transformed into Hodgkin's disease Variant of Richter's Syndrome with review of the literature.

CASE REPORT

This is a 76-year-old male patient, followed for CLL Binet stage B, in symptomatic patients, the illness begins with the onset of hepatomegaly and fatigue. He was initially treat with RFC (Rituximab, Cyclophosphamide, Fludarabine) poorly tolerated and then Rituximab / Chloraminophene. One year later, clinical examination revealed splenomegaly with cervical and axillary adenopathies and he received combination chemotherapy. In April 2016, the patient was hospitalized for alteration

general condition. The hemogram showed bicytopenia with leukoneutropenia (WBC 3.5 G / L, PNN 900G / L) and normocytic normochromic anemias : (Hb 9g/dl, 82fl VGM, 28 pg TCMH, 32 G / dl, reticulocytes scount at 50,000 / mm³). The bone marrow aspirate smear showed invasion of marrow by 60% of polymorphous cell population made up of large cells with double and multiple nuclei and fine chromatin with mirror-like aspects and agranular basophilic cytoplasm with vacuoles (Fig. 1).

This invasion necessitated an osteomedullary biopsy(BOM), which showed tumor proliferation whose morphological appearance and immunohistochemical profile was in favor of Diffuse Large B-Cell Lymphoma (CD20-, CD79a +, CD30+, Tdt -) (Figure 3) with the presence of binucleated cells reminiscent of Hodgkin cells or Reed-Sternberg cells (Figure 2). The BOM concluded that it was a Hodgkin's type of Richter's syndrome. The evolution was marked by the death of the patient in clinical picture of infectious complications with aggravation of the tumor syndrome.

DISCUSSION

Approximately 2-8% of LLC transform into lymphoma high grade called Richter's syndrome [1].The most frequent histological type is diffuse large cell lymphoma, which has the same clonal origin as LLC in 50% of the cases [2]. It corresponds to a diffuse proliferation of neoplastic large B lymphoid cells (CD20 +, CD79a +).Other histological types have also been described: lymphoblastic lymphoma [3], hairy cell leukemia [6] and T-cell lymphoma [4, 5, 7].

The transformation of CLL into Hodgkin's disease is very rare. Opinions on the reality of this transformation are still controversial. Indeed, according to the literature, only 88 cases were recorded over a period of 28 years [3, 4]. The study of the clonal relationship between CLL and Hodgkin's disease would rather have a prognostic value.

The Richter Syndrome is clinically characterized by the rapid aggravation of the tumor syndrome, the appearance of pain, the alteration of the general state and the symptoms of brain compression [11].

Two different types of prognosis are described in Hodgkin's type of Richter's syndrome [8,9, 10]:

Type 1: corresponds to the transformation of CLL into the Hodgkin disease, with a prognosis identical to the Richter syndrome. Histologically, there is an association of LLC (CD20 +, CD79a +, CD5 + and CD23 + cells) with Reed-Sternberg cells expressing CD30, CD15 and the LMP latency protein of EBV (Epstein-Barr virus) are dispersed. This type 1 corresponds to our case. This type 1 corresponds to our case.

Type 2: better prognosis; It corresponds to the co-existence of LLC and typical Hodgkin's disease or the onset of a classical Hodgkin's disease as a second cancer (de novo) in a patient bearing a known CLL.

Several studies have investigated the clonal relationship between CLL and Hodgkin's disease. In the Hodgkinian Richter syndrome, the studies performed on Reed-Sternberg cells revealed a clonal immunoglobulin heavy chain gene rearrangements variable regions which would confirm the clonal relationship with the cells of the LLC. This criterion would be poor prognosis. [5,11, 12].

In Hodgkin's Disease Variant of Richter's Syndrome, and in the absence of this clonality, the EBV serology is more frequently found positive than in classic Hodgkin's disease. In this case the prognosis is better [1,15].

These data show the important pathogenic role of EBV infection in this entity. The immunosuppression related in particular to fludarabine used in the treatment of CLL would be at the cause of this infection and would increase the risk of transformation of the Richter syndrome into Hodgkin's disease [12, 13, 14]. This would imply the use of specific antiviral treatments in the therapeutic arsenal [9, 10].

Figure 1: Hodgkin and Reed-Sternberg cells scattered in a background of otherwise typical (×400).

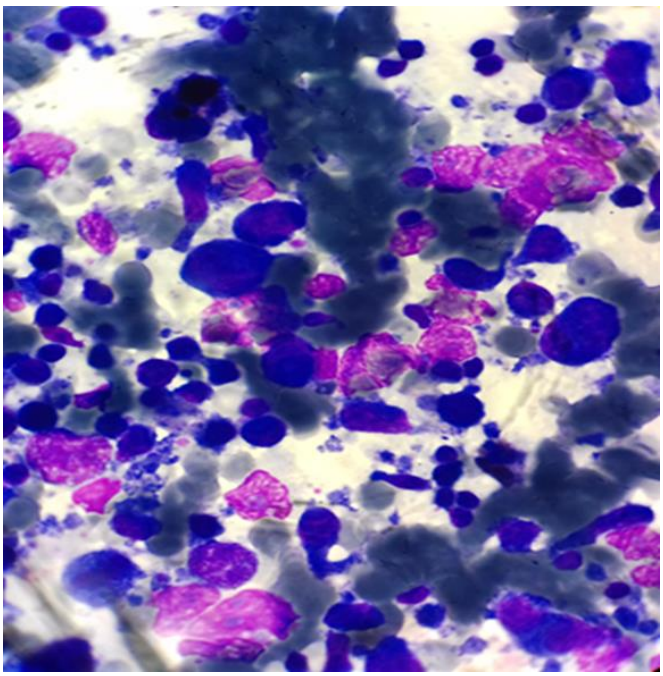


Figure 2: Infiltrate made of Reed-Sternberg cells. (x400).

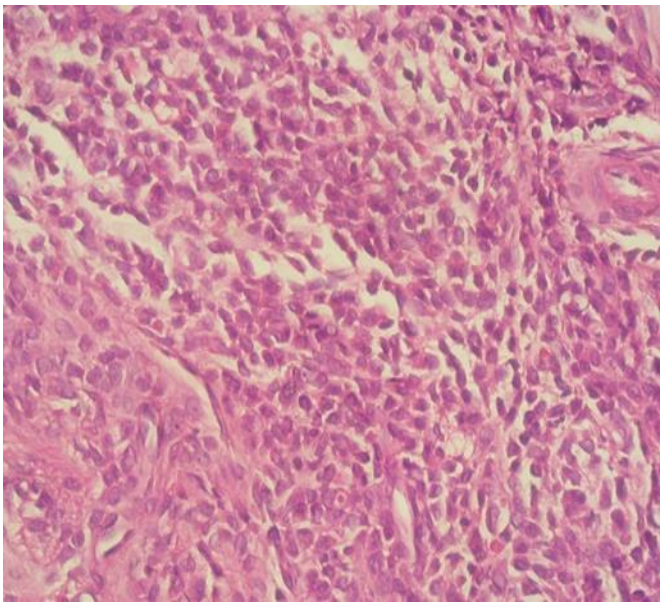
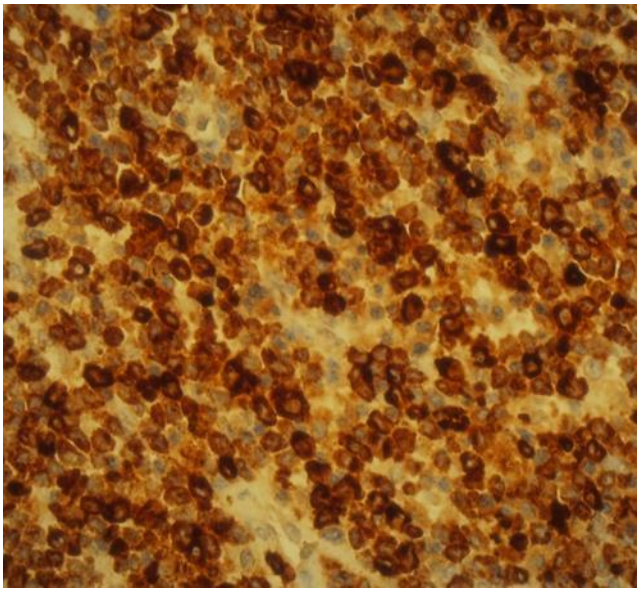


Figure 3: Hodgkin and Reed-Sternberg cells immunophenotype: anti-CD79a antibody (×400).



CONCLUSION

Hodgkin's disease Variant of Richter's Syndrome is a rare entity that corresponds to the transformation of CLL into Hodgkin's disease. The study of the clonal relationship between these two pathologies has a particularly prognostic value: the transformation of the CLL into Hodgkin's disease of poor prognosis and the co-existence of CLL and Hodgkin's disease with a better prognosis and often associated with the Epstein-Barr virus.

REFERENCES

[1] . Adiga GU, Abebe L, Wiernik PH. Partially successful treatment of a patient with chronic lymphocytic leukemia and Hodgkin's disease: case report and literature review. Am J Hematol 2003;72:267-73.

[2] . Fayad L, Robertson LE, O'Brien S, Manning JT, Wright S, Hagemeister F, et al. Hodgkin's disease variant of Richter's syndrome: experience at a single institution. Leuk Lymphoma 1996;23:333-7.

[3] . Rossi D, Cerri M, Capello D, Deambrogi C, Rossi FM, Zucchetto A, De Paoli L, Cresta S, Rasi S, Spina V, *et al*. Biological and clinical risk factors of chronic lymphocytic leukaemia transformation to Richter syndrome. Br J Haematol 2008, 142: 202-215.

[4] . Tsimberidou AM and Keating MJ: Richter syndrome: Biology, incidence and therapeutic strategies. Cancer 2005, 103: 216-228.

[5] . Ohno T, Smir BN, Weisenburger DD, Gascoyne RD, Hinrichs SD, Chan WC. Origin of the Hodgkin/Reed-Sternberg cells in chronic lymphocytic leukemia with ''Hodgkin's transformation''. Blood1998;91:1757-61.

[6] . Pescarmona E, Pignoloni P, Mauro FR, Cerretti R, Anselmo AP, Mandelli F, et al. Hodgkin/Reed-Sternberg cells and Hodgkin'sdisease in patients with B-cell chronic lymphocytic leukaemia:an immunohistological, molecular and clinical study of fourcases suggesting a heterogeneous pathogenetic background. Virchows Arch 2000;437:129-32.

[7] . Tsimberidou AM, O'Brien S, Kantarjian HM, Koller C, Hagemeister FB, Fayad L, et al. Hodgkin transformation of chronic lymphocytic leukemia: the MD Anderson Cancer Center experience. Cancer 2006;107:1294-302.

[8] . Kanzler H, Kuppers R, Helmes S,Wacker HH, Chott A, Hansmann ML, et al. Hodgkin and Reed-Sternberg-like cells in B-cell chronic lymphocytic leukemia represent the outgrowth of single germinal-center B-cell-derived clones: potential precursors of Hodgkin and Reed-Sternberg cells in Hodgkin's disease. Blood 2000;95:1023-31.

[9] . Bockorny B, Codreanu I and Dasanu CA: Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: A retrospective analysis of world literature. Br J Haematol 2012,156: 50-66.

[10] . Gaulard P, Brousse N. Maladie de Hodgkin classique : biologie et formes frontiиres. Ann Pathol 2004;24:330-48.

[11] . Kuppers R, Sousa AB, Baur AS, Strickler JG, Rajewsky K, Hansmann ML.Common germinal-center B-cell origin of the malignant cells in two composite lymphomas, involving classical Hodgkin's disease and either follicular lymphoma or B-CLL. Mol Med 2001;7:285-92.

[12] . Fong D, Kaizer A, Spizzo G, Gastl G, Tzankov A. Hodgkin's disease variant of Richter's syndrome in chronic lymphocytic leukaemia patients previously treated with fludarabine. Br J Haematol 2005;129:199-205.

[13] . Dasanu CA: Intrinsic and treatment-related immune alterations in chronic lymphocytic leukaemia and their impact for clinical practice. Expert Opin Pharmacother 2008, 9: 1481-1494.

[14] . Dolcetti R and Carbone A: Epstein-Barr virus infection and chronic lymphocytic leukemia: A possible progression factor? Infect Agent Cancer 2010, 5: 22.

[15] . Krugmann J, Tzankov A, Gschwendtner A, Fischhofer M, Greil R, Fend F, et al. Longer failure-free survival interval of Epstein-Barr virus-associated classical Hodgkin's lymphoma: a single-institution study. Mod Pathol 2003;16: 566-73.