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CASE REPORT

Primary Splenic Hodgkin's Disease in a Patient with Chronic Granulomatous Disease, a Case Report

B Geramizadeh[1]*, A Alborzi[2], M Hosseini[1], M Ramzi[3], HR Foroutan[4]

[1]Department of Pathology, Transplant Research Center, [2]Department of Pediatric Infectious Disease, Prof. Alborzi Research Center, [3]Hematology Research Center, [4]Department of Pediatric Surgery, Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

Here we report a 20-year-old male, a known case of chronic granulomatous disease (CGD), who presented with fever and splenomegaly. After splenectomy, primary splenic Hodgkin's disease was diagnosed. Immunohistochemistry confirmed the diagnosis (positive CD15 and CD30). With chemotherapy, his fever was subsided and now after 6 months, he is doing well. Although primary immune deficiencies have been reported to show an increased tendency to develop malignancies, until now there has been no report of a patient with CGD and Hodgkin's disease.

Keywords: Chronic granulomatous disease; Spleen; Hodgkin's disease

Introduction

Chronic granulomatous disease is a rare and inherited disorder that affects approximately 1/200000 live births.[1] It is a genetically heterogenous defect of one of the subcomponents of the reduced nicotinamide adenine dinucleotide phosphate oxidase of neutrophils, monocytes, macrophages and eosinophils.[2] The defect results in a reduced ability to produce superoxide ions and hydrogen peroxide and is responsible for the impaired ability to kill intracellular microorganisms.[3] Increased incidence of malignancies has also been reported in primary immune deficiencies as compared to general population.[4] Patients with chronic granulomatous disease have been shown to develop increased overall relative risk of associated malignancies.[5] Herein we report for the first time a case of CGD associated with splenic Hodgkin's disease.

Case Report

A 20-year-old male, a known case of CGD, presented with fever and cough for 3 weeks prior to admission. The diagnosis of CGD had been made in childhood by studies of his neutrophil function.He had a history of weight loss in 3 months. Physical examination showed splenomegaly. No peripheral lymphadenopathy was detected. Sonography showed severely enlarged spleen with several varying-sized lesions, which were in favor of splenic abscesses. Bone marrow aspiration and biopsy were unremarkable. Laboratoratory data revealed leukopenia (WBC=1200 /ml), anemia (Hb=5.8 gr/ml), and thrombocytopenia (PLT=25000/ml). First hour ESR was 81 and LDH was also not significantly high (500 IU/L). Several other workups such as polymerase chain reaction (PCR) for mycobacteria, leishmann, aspergillus and EBV were all negative. Despite treatment with several antibiotics, the patient remained febrile while no source of infection was identified.

Splenectomy was performed, which showed numerous small whitish dots in the parenchyma. Histologic sections showed many mono- and binucleated large cells with prominent nucleoli which were suggestive of Reed-Sternberg cells (Figure 1). Immunohistochemistry showed positive CD15 and CD30 and negative LCA, ALK, EMA, CD3 and CD20 in the large cells (Figure 2). There were some eosinophils, plasma cells and lymphocytes in the background. With the diagnosis of Hodgkin's disease,

***Correspondence:** Bita Geramizadeh, MD, Professor of Pathology, Transplant Research Center, Department of Pathology, Shiraz University of Medical Sciences, PO Box: 71345-1864, Shiraz, Iran. Tel/Fax: +98-711-6276211, e-mail: geramib@sums.ac.ir

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mixed cellularity type, classic chemotherapy for Hodgkin's disease was started, consisting of 12 courses of ABVD for 6 months (Doxorubicin, Bleomycin, Vinblastin, Dacarbazine**)**. He had a good response to treatment; fever subsided and now after a yea**r**, he is doing well (Figure 3).

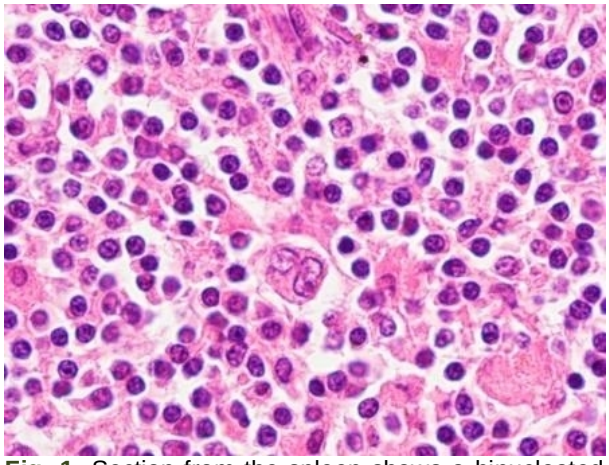

Fig. 1: Section from the spleen shows a binucleated Reed-sternberg cell (H&EX400)

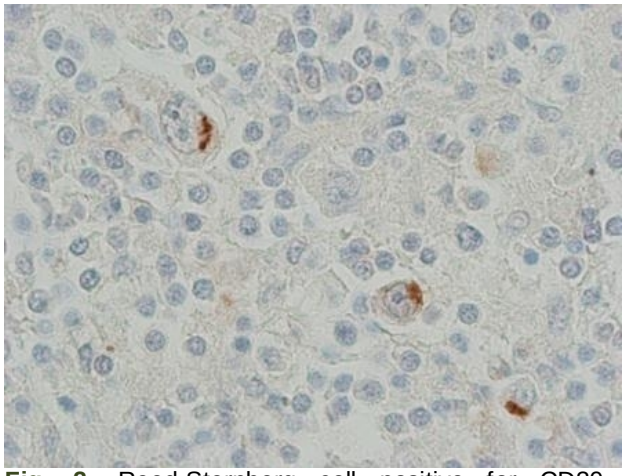

Fig. 2: Reed-Sternberg cell positive for CD30 (Immunohistochemistry X400)

Discussion

CGD is a diverse group of hereditary diseases in which one of the subcomponents of the reduced nicotinamide adenine dinucleotide phosphate oxidase of neutrophils, monocytes, macrophages and eosinophils is defective. The defect is the reduced

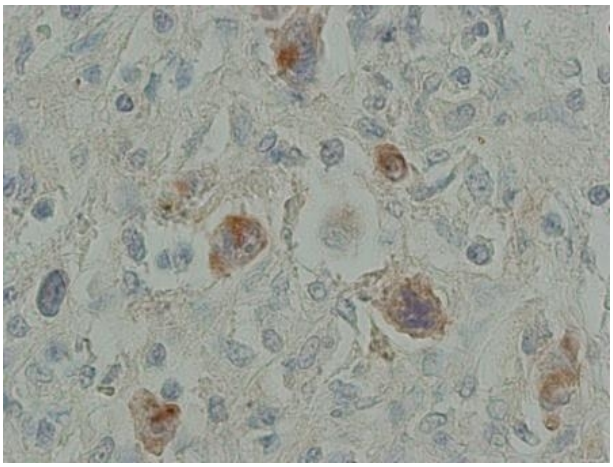

Fig. 3: Reed-Sternberg cell positive for CD15 (Immunohistochemistry X400)

ability to produce superoxide ions and hydrogen peroxide and impaired ability to kill intracellular microorganisms,[3] so the sufferes are prone to different kinds of infections. Increased incidence of malignancies have also been reported in primary immunodeficiencies.[6] CGD patients have been reported to carry increased relative risk of malignancies,[5] but there are very few reports available.[6] Reported malignancies are acute lymphoblastic leukemia,[1] retinoblastoma, malignant melanoma, and rhabdomyosarcoma.[5]

In patients with CGD, antibody dependent cytotoxicity by polymorphonuclears (PMNs) is defective, which can be involved in PMN lysis by tumor cells.[7] So these patients as those with other immune deficiencies are prone to malignancy but the exact mechanism should be further investigated.[1]

We herein report our first case of CGD associated with pimary splenic Hodgkin's disease. Primary splenic Hodgkin's disease is rare,[8-11] but its occurance in a case of CGD has not been reported. Our patient presented with fever, weight loss and splenomegaly with no identifiable source of infection. Splenectomy was done because he did not respond to antibiotic therapy and also sonography of the spleen showed multiple lesions suggestive of abscesses. Pathologic study of the spleen revealed Hodgkin's disease. The patient showed a good response to chemotherapy and his fever subsided. Now after 6 months he is doing well.

Although this may be an incidental occurance of splenic Hodgkin's disease in a patient with CGD, it can also be indicative of an association between CGD and malignancy. Thus, in every patient with CGD,

malignant lesions should be considered in the differential diagnosis of splenic lesions.

Conflict of interest: None declared.

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