CASE REPORT

DISSEMINATED FUNGAL INFECTION ON BONE MARROW TREPHINE IN AN ASPLENIC PATIENT

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hyposplenism increases the risk of life-threatening infection with encapsulated bacteria. however, literature review revealed that hyposplenism is also a risk factor for disseminated fungal infection. here, we report a case of individual who presented with pyrexia of unknown origin and had splenectomy for hemolytic anemia and later he found to have disseminated fungal infection on bone marrow examination. this case emphasized the likelihood of disseminated fungal infection in an asplenic patient and also importance of bone marrow trephine in prompt diagnosis and management of patient.

Keywords: Bone trephine; Fungal infection, hyposplenism

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INTRODUCTION

Spleen is the largest lymphoid organ and plays a vital role in defense mechanism against various organism. Hyposplenism increases the risk of life-threatening infection especially with encapsulated bacteria, called as post splenectomy sepsis which include mainly Streptococcus pneumoniae, Haemophilus influenzae and Neisseria meningitidis.[1] Risk of post splenectomy sepsis is high in children primarily those below two years age, but there are cases of sepsis reported in patients with 20–40 years post splenectomy (2). A literature review also revealed that splenectomy is also a risk factor for disseminated fungal infection.[3,4] Here, we present a case of fungal infection on bone marrow trephine in a middle-aged male who had splenectomy at young age for hemolytic anemia.

CASE REPORT

A 55-years old male presented with weakness, fever and weight loss for one year. He had splenectomy at the age of 23 years for hemolytic anemia of unknown etiology. There was no history of any animal exposure. He received multiple antibiotics and anti-tuberculous therapy despite repeated negative blood cultures. Physical findings included pallor and hepatomegaly. Since no evident cause was recognized, primary physician requested bone marrow biopsy for workup of pyrexia of unknown origin. Complete blood counts showed hemoglobin 10.0 g/L, Hct 30, MCV 90 fl, MCH 27pg, white blood cells 11 x 10^9/L, absolute neutrophil count 6.7 x 10^9/L and platelets 907 x 10^9/L. Bone marrow aspirate showed trilineage hematopoiesis with multiple oval inclusions in histiocytes (panel A and B). Bone trephine was hyperplastic showing similar histiocytic inclusions staining positive with periodic acid-Schiff (PAS) and Grocott's methenamine silver (GMS) stains (panel C and D) suggesting fungal infection. Primary physician was promptly informed about bone marrow findings. Though his human immunodeficiency virus (HIV) testing and blood culture were negative but he was started on IV amphotericin B with much clinical improvement.

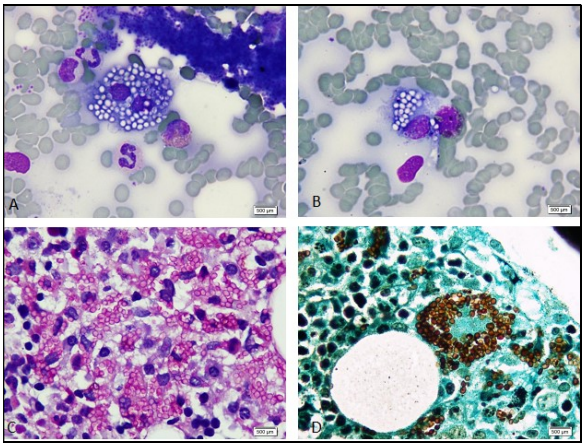

Figure-1: Bone marrow aspirate and trephine at 100x. A, B. Leishman stain; C. PAS stain; D. Gomori Methenamine silver stain

DISCUSSION

Spleen is the largest lymphoid organ and plays a vital role in defense mechanism against various organism. Asplenic individuals are vulnerable to serious infections, peculiarly with encapsulated bacteria such as Sreptococcus pneumoniae, Haemophilus influenzae and Neisseria meningitidis.[1] Children are particularly at risk but adults can also have long time risk of developing life-threatening infection. However, literature review revealed that splenectomy is also a risk factor for disseminated fungal

infection.[2,3] Immunocompetent individuals with fungal infection are usually asymptomatic. Some non-specific symptoms such as cough, chest pain, and fever may occur, disseminated fungal infections are typically seen in immunocompromised individuals especially with human immunodeficiency virus infection.[4] However, our case report serve as an important reminder that asplenic individuals can present with disseminated fungal infection. Role of bone marrow biopsy for patients presenting with pyrexia of unknown origin has been well studied in literature.[5] Bone trephine of patients presenting with pyrexia of unknown origin must be thoroughly examined. Fungal infections do not cause specific peripheral film findings. However, organisms may be seen in bone marrow in systemic fungal infections as PAS and GMS positive round or oval bodies within histiocytes. Bone marrow examination in this case assist in expedient diagnosis and treatment of patient while other laboratory workup such as culture was pending. This shows the importance of bone marrow examination in patient with pyrexia of unknown origin.

In conclusion, splenectomised patient is at increased risk of developing disseminated fungal infection. In this case, bone marrow trephine helped in prompt diagnosis and management of patient.

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