Erythrophagocytosis in Bone Marrow: A Clue to Pyrexia of Unknown Origin

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ABSTRACT

Bone marrow (BM) is usually done to investigate the patients for Pyrexia of Unknown Origin (PUO). However, only 16.5% of cases reveal any diagnostic information. Increasing incidence of atypical presentations are seen in typhoid. Careful examination of BM to pick up clues for diagnosis is important. We report a case of a 15 year old female who presented with fever associated with altered sensorium, gum bleeding and loose stools. Hematological findings revealed pancytopenia with macrocytic anemia with erythrophagocytosis in BM aspirates. A diagnosis of typhoid was made with a positive typhi dot IgM. The authors present this case to highlight the importance of simple BM findings of erythrophagocytosis and how awareness about this feature can point towards the right diagnosis in the midst of atypical clinical and hematological features. J Microbiol Infect Dis 2018; 8(2):73-75

Keywords: Bone marrow, typhoid fever, fever, macrophages, phagocytosis

INTRODUCTION

Bone marrow (BM) is usually done to investigate the patients for Pyrexia of Unknown Origin (PUO). However, only 16.5% of cases reveal any diagnostic information [1]. The authors present this case to highlight the importance of simple BM findings of erythrophagocytosis and how awareness about this feature can point towards the right diagnosis in the midst of atypical clinical and hematological features.

CASE REPORT

We report a case of a 15-year old female who presented with fever since 20-25 days associated with altered sensorium, gum bleeding and loose stools for 3-4 days. On examination, submandibular lymphadenopathy was present. No hepatosplenomegaly seen. Hemogram and peripheral smear showed pancytopenia (hemoglobin 4.7 g/dL, total leucocyte count 2,300/mm$^3$, platelet count 15,000/mm$^3$), macrocytic anemia along with toxic granulation of neutrophils. Bone Marrow Aspirates (BMA) were hypocellular, erythroid showing megaloblastic maturation with mild dyserythropoiesis and dysmyelopoiesis was seen. Histiocytes were increased with many showing hemophagocytosis particularly erythrophagocytosis (Figure 1). No granulomas seen. Bone Marrow Biopsy (BMB) showed similar features i.e. hemophagocytosis in the absence of granulomas. Hematological impression of cellular reactive marrow was given. A detailed work up for evaluating infective etiology was advised before considering primary hemophagocytosis. Malarial antigen (Optimal-ID) and widal test were negative. Blood and BM culture were not done. Typhi dot IgM (ELISA) came out to be positive. A diagnosis of typhoid was made. On follow up antibiotics were started and patient responded to treatment.

DISCUSSION

Tropical countries like India where typhoid fever is endemic, presentation as PUO can pose as a diagnostic dilemma. Increasing incidence of atypical presentations is quite often seen in endemic areas. In a study done by Iqbal et al in Pondicherry, India 7/88 (8%) of culture proven cases of typhoid fever presented as PUO [2]. Though, isolation of Salmonella typhi on blood culture remains the best method of diagnosis, it requires training of staff for specialized
Various studies have suggested gocytosis. This study was id is endemic, hemophagocytic syndrome (BAHS) is in the absence of BMG and BAHS. There is only one study in literature which has reported typhoid presenting as erythrophagocytosis (typhoid cells) in the absence of BMG. This study was done by Young et al in 1986 who has reported erythrophagocytosis in BMG. Presence of erythrophagocytosis in BMG is a clue towards the diagnosis of typhoid fever. Careful examination of BMG to pick up clues for diagnosis is important. The present case highlights the importance of erythrophagocytosis in BMG in detecting typhoid with atypical clinical and hematological features.

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