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Lupus Nephritis – A Life Threatening Renal Disease

KEYWORDS: lupus nephritis, child, hemophagocytosis

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ABSTRACT *Systemic lupus erythematosus (SLE) is an autoimmune disease in which organs and cells undergo damage mediated by tissue binding auto antibodies and immune complexes. Nephritis is the most serious manifestation of SLE leading to mortality in first decade of disease. We report a childpresenting with fever, joint pain,purpura, mouth ulcer,muco-cutaneous bleed and weight loss. He had pancytopenia withhypocomplementemia. Anti-nuclear antibodies and anti-double stranded DNA were positive. Serum lactate dehydrogenase, fibrinogen, triglycerides, ferritin andcreatininewere elevated. Slit lamp examination revealed retinal hemorrhages with no uveitis. Two dimensional echo showed mild mitral valve and trivial mitral regurgitation. Bone marrow biopsy showed dilute marrow with mild hemophagocytosis.Renal biopsy showed diffuse proliferative lupus nephritis (grade IV). He was managed according to hemophagocyticlymphohistiocytosis (HLH) Protocol (2004) along with anti-hypertensives, Septran and Flucon prophylaxis. High index of suspicion, early diagnosis and treatment can be life saving.*

Introduction:

HLH is a rare disorder of immune system, affecting macrophages that grow abnormally and accumulate in body organs which include live spleen, bone marrow, central nervous sytem and skin.There are 2 types of HLH (1). Primary HLH is an inherited condition involving a genetic mutation in perforin gene (PRF-1) and gene encoding Munc 13-4 protein which alters natural killer andT cell function. Secondary HLH is triggered by infections (viral, bacterial, fungal), autoimmune disorders, primary immune deficiencies or cancer.This results in massive secretion of cytokines like Interferon γ, Tumor Necrosis Factor (TNF) α and Granulocyte Macrophage Colony Stimulating Factor (GM-CSF) (2). These activate macrophages which phagocytose all other blood cells. This hyper- stimulation or *cytokine storm* results in signs and symptoms of HLH (3).

Case Report:

A 9 year old boy presented with recurrent high grade fever and joint pain (small and large joints) since 4 months. History of mouth ulcer and weight loss present since 2 months. History of muco-cutaneous bleed along withpurpura over face, back and legs present since 1 month.No significant birth and family history. He had pallor, purpura, mouth ulcer, muco-cutaneous bleed, hypertension, moderate hepatosplenomegaly and restricted joint movements (knee, ankle, wrist) on examination. On investigation, he had severe pancytopenia (absolute neutrophil count-1406) and hypocomplemetemia (C3-39.2 mg/dl and C4-2.36 mg/dl). Anti-nuclear antibodiesand anti-double stranded DNA were positive. Serum lactate dehydrogenase (1390 U/L), Serum fibrinogen levels (349 mg/dl) were normal, triglycerides (211 mg/dl), ferritin (1070 ng/ml), ESR (80 mm/hr), C-reactive protein (55 mg/l) and creatinine (1.3 mg/dl) were elevated. Slit lamp examination revealed retinal hemorrhages with no uveitis. Anti-streptolysin O titer was non-reactive and urine albumin was nil. Abdominal sonography showed hepatosplenomegaly. Two dimensional echo showed mild mitral valve and trivial mitral regurgitation. Renal biopsy showed diffuse proliferative lupus nephritis- grade IV (Figure 1).Bone marrow biopsy showed dilute marrow with evidence of mild hemophagocytosis (Figure 2). Satisfying the diagnostic criteria of lupus nephritis, he was treated according to HLH Protocol (2004) (4). The initial 8 weeks of therapy includedintravenous Etoposide(biweekly for 2 weeks and later once weekly), oral Dexamethasone (daily and tapered after 2 weeks) andoral Cyclosporin A. Intra-thecal therapy with Methotrexategiven once weekly. Further, continuous therapy from 9-40 weeks included Etoposide and Dexamethasone pulses every second week. Cotrimoxazolewas given two times a week for pneumocystis carinii prophylaxis and Fluconazole given daily for fungal prophylaxis. He received five cycles of IV Cyclophosphamide (once a month) along with oral steroids, anti-hypertensives (daily), septran and Flucon prophylaxis (thrice a week and daily respectively).

Discussion:

A high degree of clinical suspicion is needed in initial diagnosis of this condition, as clinical features and laboratory investigations are no-specific. According to Histiocyte Society, diagnostic criteria includes fever, splenomegaly, pancytopenia or depression of at least two of three cell lines, hypertriglyceridemia or hypofibrinogenemia with hemophagocytosis in bone marrow, spleen and lymph nodes. Early diagnosis and initiation of treatment is proven to be life saving from this life threatening disease.

Conclusion:

We have described a case with diverse primary etiologies but presenting as lupus nephritis (grade IV), satisfying the diagnostic criteria. High index of suspicion, early diagnosis and treatment can be life-saving in some of these cases.

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Images:

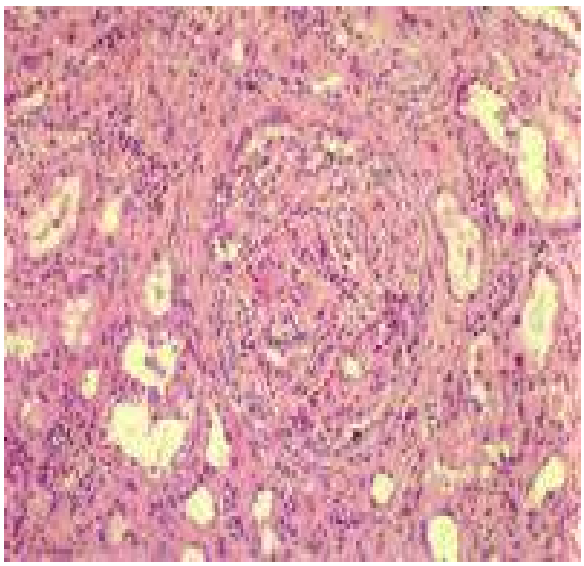

Figure 1: Diffuse lupus nephritis with crescent formation (renal biopsy)

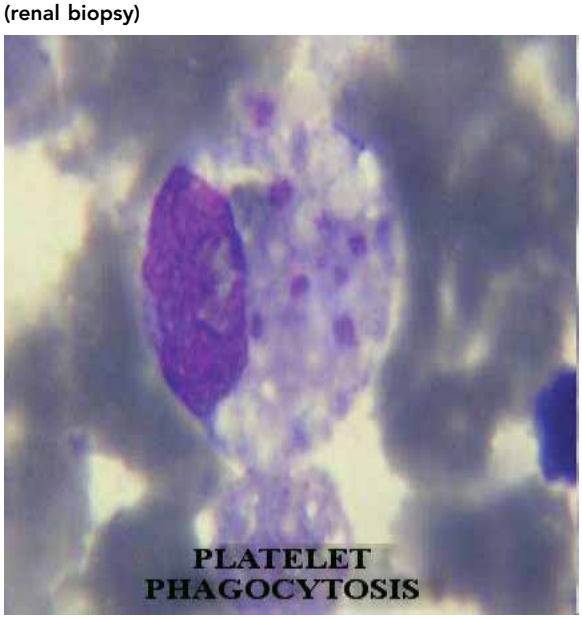

Figure 2: Platelet phagocytosis (bone marrow biopsy)

REFERENCE 1. Kogawa K, Lee SM, Villaneuva J, et al: Perforin expression in cytotoxic lymphocytes from patients with hemophagocyticlymphohistiocytosis and their family members. Blood 2002;99:61-66. | 2. Arico M, Danesino C, Pende D, Moretta L. Pathogenesis of hemophagocyticlymphohistiocytosis. Br J Hematol. 2001 Sep;114(4):761-9. | 3. Favar B. Hemophagocyticlymphohistiocytosis: A hemophagocytic syndrome. SeminDiagnPathol 1992; 9: 63-74. | 4. Henter JI and Study Group of Histiocyte Society: Treatment Protocol of the Second International HLH Study; HLH 2004: 6-10.