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Acute Prostatitis and Hemophagocytic Syndrome in a Case of Brucellosis.

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Abstract:

Hemophagocytic syndrome (HPS) is a disorder characterized by benign proliferation of hystiocytes and marked hemophagocytosis in bone marrow. Hemaphagocytic syndrome (HPS) is a rare manifestation of brucellosis. Genitiurinary complications of brucellosis are very diverse and include hydrocele, urinary tract infection, pyonephrosis, epididymo-orchitis, infertility and prostatitis. Acute prostatitis is rarely reported as the first manifestation of. This article is introducing a case of brucellosis presented with acute prostatitis and concurrent hemophagocytic syndrome.

Keywords: Acute prostatitis, Hemophagocytic syndrome, Brucellosis

Introduction:

Hemophagocytic syndrome (HPS) is a disorder of mononuclear cells and phagocytes, characterized by benign proliferation of hystiocytes and significant hemophagocytosis in bone marrow.[1, 2] Diagnosis of HPS is made based on clinicopathologic findings including fever, splenomegaly, liver dysfunction, cytopenias, hypertriglyceridemia , decreased fibrinogen level, hemophagocytosis in bone marrow, lymph nodes and spleen and increased ferritin level.[3] The pathogenesis of HPS is increase of cytokines level

induced by activated T-cells and macrophages. HPSs is classified into two types: primary (familial) type and secondary (acquired) type. Secondary type is often association with infections, autoimmune disorders and malignancies.[4, 5]

Brucellosis is an important, world wide, zoonotic disease which still is remained an un-controlled problem in many underdeveloped countries.[7] A variety of complications are associated with Brucellosis including gastrointestinal, pulmonary, Neurological, genitourinary and hematological involvement. Brucellosis has different hematologic presentations. Some hematologic abnormalities such as bone marrow involvement and splenomegaly are usually seen in patients with brucellosis.[9, 10] The most common manifestations are anemia, leucopoenia, and thrombocytopenia. Hemaphagocytic syndrome (HPS) is a rare manifestation of brucellosis.[11, 12, 13] Ismail Sari,et al studied 202 patients with brucellosis during 6 years period and found that 15(7%) patients had HPS in bone marrows.[11] Al-Eissa, et al investigated 276 patients with proven brucellosis and found hemophagocytosis in 14(5%)cases.[12] Ali Akbar Heydari, et al, reported Hemophagocytosis and pulmonary involvement in a 45-year-old woman with brucellosis.[14] Genitourinary complications of brucellosis include hydrocele, urinary tract infection, pyonephrosis, infertility, prostatitis.[7,8] Acute prostatitis is a rare presentation of brucellosis in.[6, 8, 13]We would like to report a case of brucellosis presented with hemophagocytosis and acute prostatitis, which both of them are reported as rare presentations of brucellosis in literature.

Case History:

A 70 y/o male was admitted in urology unit because of acute prostatitis, presented with fever, dysuria, frequency, nocturia and hematuria. He has positive history of brucellosis a few years ago.

Physical exam showed fever, pallor and digital rectal exam revealed, a tender and warm prostate with normal size, rubbery stature without nodularity. Initially, clinical diagnosis of acute prostatitis was made and ampicillin and aminoglycoside was administrated. After 48 hours, fever was stopped. Due to pancytopenia and generalized bone pain, hematology consultation was done. Bone marrow aspiration, whole body bone scan, peripheral blood smear (PBS) and serum PSA, Wright and Coomb's Wright tests were ordered. Laboratory findings are included: WBC=2900/µL (PMN=83.4%, Lymph=11.9%), Hb=11.9 gr/dl, HCT=35.1%, Plt=30,000/µL. AST=247 U/L (Nl<50), ALT =55 U/L, AlkPh=1101(High), Total Billirubin=4.11 mg/dl (Nl<1.2), Direct Billirubin=2.06 mg/dl (Nl<0.2), Prothrombin time (PT)=14 second, Partial thromboplastin time(PTT)=38 second. PSA=0.5(NL<10), ESR=2, CRP=2+, LDH=1394 U/L (NL<480), Ferritin: 2600 ng/ml (NL: 38-457), Blood culture: No growth after 2 days. PSA titre was within normal range.

Wright's titre and Coombs Wright's titre were 1/640 and 1/640 respectively. 2ME titre was1/320. Serologic tests for HBS Ag, HCV Ab, ANA, and Anti-Ds DNA were reported negative.

Chest X-ray and Echocardiography were normal.

PBS exam revealed many echynocytes, and target cells. Platelet count:

60,000/µL, WBC: 2500/µL (PMN dominancy).

Bone marrow aspiration showed 35-40% cellularity, increased in Megakaryopoiesis, Erythropoiesis was adequate, in myeloid series there was shift to left, marked increased in macrophages number and macrophages containing platelets, RBCs and myeloid cells inside in their cytoplasms compatible with hemophagocytic syndrome. Abdominopelvic sonography showed mild splenomegaly and normal size prostate.

Whole Body bone Scan revealed symmetric increased of radionuclide uptake by whole body except shoulders and first costosternal joint and suggested degenerative or inflammatory processes in these areas.

Diagnosis of acute prostatitis and hemophagocytic syndrome secondary to brucellosis was made and Rifampicin and Doxycycline was initiated and he was transferred to Infectious disease unit. After 3-4 days, patient felt better and haematological indices (WBC, platelet counts and hemoglobin level) started to rise and after a week, AST and ALT started to decrease. Patient was discharged with anti-brucellosis medication. After one month, WBC and PLTs count were normalized (Table-1).

	LABORATORY RESULTS	OTHER PARACLINICAL ASSESSMENTS
On admission	WBC=1740/µL, PMN=83.4%, Lymph=11.9%, Hb=9.6 gr/dl, Plt=3000/µL AST=306 U/L (Nl<50), ALT=94 U/L, AlkPh=1662 (High), Total Billirubin=4.11 mg/dl (Nl<1.2), Direct Billirubin=2.06 mg/dl (Nl<0.2), Prothrombin time (PT)=14 second, Partial thromboplastin time(PTT)=38 second. PSA=0.5(NL<10), ESR=2, CRP=2+, LDH=1394 U/L (NL<480), Ferritin: 2600 ng/ml(NL: 38-457), FBS=110mg/dl, BUN=20 mg/dl, U/A=Nl	· Chest X-ray was normal. · Echocardiography was normal. · Pelvic sonography: prostate volume=45cc
A week after admission	WBC=3000/µL, Hb=11.9 gr/dl, Plt=85000/µL, AST=247 U/L (Nl<50), ALT =55 U/L, AlkPh=1101(High), Wright=1/640, Coombs Wright=1/640, 2ME=1/320, Blood culture: No growth after 2 days.	· PBS: RBC= many echynocytes, and target cells, Plt= 60,000/µL, WBC= 2500/µL (PMN dominancy)· Abdominopelvic sonography showed mild splenomegaly and normal size prostate· Whole Body Scan: symmetric increased of radionucloid uptake by whole body except shoulders and 1th costosternal joint which suggests degenerative or inflammatory processes in these areas. Also left kidney position is lower than right one
A month after treatment beginning	WBC=4300/µL, PMN=37%, Lymph=61%, Hb=11.5 gr/dl, Plt=275000/µL Wright=1/160, Coombs Wright=1/320, 2ME=1/80	

Results:

In this case, brucellosis presented with acute prostatitis, we found splenomegaly, liver dysfunction, pancytopenia and hemophagocytosis in BMA and diagnosis of hemophagocytic syndrome secondary to brucellosis was made. After starting anti-brucellosis therapy, the patient got improved and discharged in good general status. At next follow up visits, his symptoms and hematologic problems were improved and blood culture was negative after 6 weeks. Also serological tests such as ELIZA were requested which were positive. At first patients CBC count was checked weekly, after becoming normal, it was tested monthly. We followed him up for 6 months. At the time of submitting this manuscript, he has a good clinical condition with normal CBC.

Discussion:

Hemophagocytic syndrome (HPS) is a disorder of mononuclear and phagocytes [1, 2] which has primary and secondary forms. Secondary form may be due to infections (viral, bacterial, parasitic and fungal), malignancies, collagen vascular disorders and metabolic disorders.[4, 5] Infectious causes of HPS include brucellosis, tuberculosis, leishmaniosis and viral infections (e.g., HIV, Epstein-Barr virus (EBV), Cytomegalovirus (CMV) and parvovirus B 19).

Clinical presentations of HPS include fever, hepatosplenomegaly, hyper ferritinemia, hypertriglyceridemia, hypofibrinogenemia and evidence of hemophagocytosis in bone marrow or lymph nodes.[3]

In all patients with hemophagocytic syndrome a full workup for finding infectious cause including blood culture, chest-X ray, and serologic tests for EBV, CMV, HIV, Parvovirus B19 should be performed. Also, screening test for brucellosis, rickettsioses, leishmaniosis and malaria is necessary in patients with HPS in endemic geographic areas, history of travel to an endemic area or sick contacts (e.g., animal product exposure). Brucellosis has various hematologic presentations. The most common manifestations are anemia, leucopoenia, and thrombocytopenia. Hemaphagocytic syndrome is a rare manifestation of brucellosis. Genitiurinary complications of brucellosis are very diverse and include hydrocele, urinary tract infection, pyonephrosis, infertility and prostatitis.[7, 8] Acute prostatitis is rarely reported as the first manifestation of brucellosis in the case reports.[6, 8, 13] Clinicians, especially in endemic areas, should always consider brucellosis and its atypical features in their differential diagnosis. HPS and prostatitis secondary to brucellosis are curable, thus; we should consider brucellosis in any patient with HPS and/or prostatitis.

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