Asplenia-associated babesiosis – A quagmire traversed by exchange transfusion

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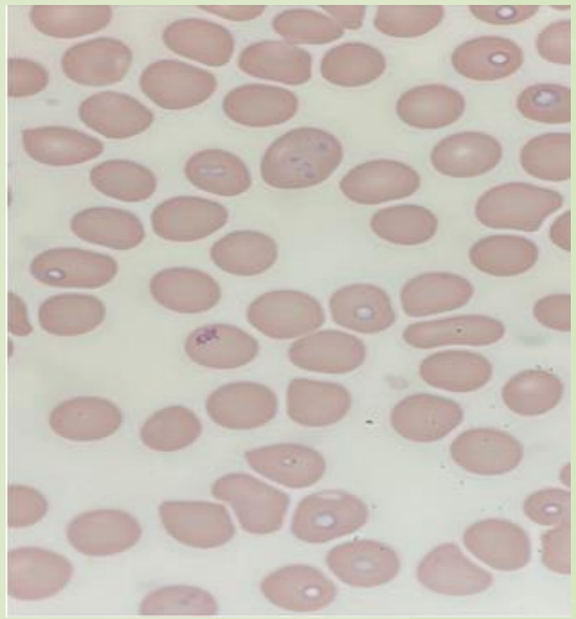
Introduction: Babesiosis is a potentially life-threatening tick-borne parasitic infection. Asplenia is a risk factor for severe illness and may require exchange transfusion.

Case Description: A 58-year-old male with a history of splenectomy presented with subjective fevers, weakness, decreased oral intake, and abdominal pain. He denied any rashes, tick bites, or recent travel. On examination, the patient was febrile (102.7°F), tachycardic (106/min), and ill-appearing. An abdominal exam was remarkable for right upper quadrant tenderness.

Labs revealed anemia (hemoglobin 10.4g/dL) and thrombocytopenia (74x109/L). A peripheral smear showed schistocytes, hyperbilirubinemia (1.7µmol/L), elevated LDH (583units/L), low haptoglobin (<30mg/dL), and reticulocytosis (13%), consistent with hemolysis. Testing for SARS-CoV-2, Ehrlichia, Borrelia, Anaplasma, and Viral Hepatitis was negative.

Antibody testing for Babesia Microti was positive. A blood parasite smear confirmed Babesia microti (Figure 1.) with a parasitemia of 9.5%.

The patient received intravenous azithromycin 500 mg daily and atovaquone 750 mg every 12 hours for severe babesiosis. On day two of hospitalization, parasitemia increased to 14.7%. Hemoglobin dropped to 8.7gm/dL and platelets to (52x109/L) on day three.



(Figure 1.) Giemsa stain thin blood smear with round, paired, and multiple parasitic forms of Babesia Microti.

The parasite load remained consistently above 10% even after medical treatment for severe babesiosis. Due to high-grade parasitemia > 10 % and severe hemolysis (Hb < 10), the patient underwent an RBC exchange transfusion.

There was a clinical improvement after one session of exchange RBC transfusion. Hemoglobin remained stable at 8.7g/dl, and thrombocytopenia improved to (81x109/L) one day after RBC exchange transfusion. Parasitemia dropped to 1.2% after four days of exchange transfusion, and azithromycin was switched to oral. He received nine days of inpatient azithromycin and atovaquone. He was discharged with a plan to continue the oral antimicrobials for three more weeks. During outpatient follow-up five days after discharge, parasitemia had dropped to 0.2%, and the patient felt back to his baseline.

Discussion: Asplenia is associated with severe babesiosis, prolonged hospitalization, morbidity, and mortality of up to 73%. Early recognition of risk factors for severe parasitemia and preparing for exchange transfusion is paramount in treating such patients.

Keywords: Babesiosis, parasitemia, exchange transfusion, asplenia