Babesiosis Manifesting as Splenic Rupture in the Midwest

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Introduction

Babesia microti is a protozoa transmitted primarily by the tick vector *Ixodes scapularis*. It invades red blood cells leading to cell lysis. Babesiosis is endemic in the Northeast and Upper Midwest United States. Clinical manifestations range from subclinical to severe and may take weeks or months to manifest as the incubation time following a tick bite is approximately one to four weeks. Splenic rupture is a rare complication that usually presents in an otherwise healthy, younger patient with low parasitemia. In this case report, we present an Ohio resident with numerous tick bites months prior to an atraumatic splenic rupture requiring emergent splenectomy.

Case Report

A 71-year-old male presented to the emergency department with multiple episodes of syncope. He reports falling face forward during one of the episodes and waking up 2 or 3 minutes later but denies any trauma prior to the onset of symptoms. He complained of back pain, generalized abdominal pain, nausea, and dizziness upon standing. A CT scan of the abdomen and pelvis with contrast revealed a grade V splenic injury with active hemorrhage (Figure 1). The patient presented tachycardic and hypotensive and was subsequently taken to the operating room for emergent exploratory laparotomy with splenectomy. He was discharged on POD5 but returned 15 days later with fever, leukocytosis, and lactic acidosis. A parasite was detected in the blood and a blood smear was ordered which confirmed babesiosis. The smear confirmed *Babesia microti* infection and the patient was started on 1000 mg azithromycin IV and atovaquone 750 mg orally twice daily. He was found to have a parasitemia of 13% necessitating transfer on hospital day two to another facility for plasmapheresis.

Case Report Cont.

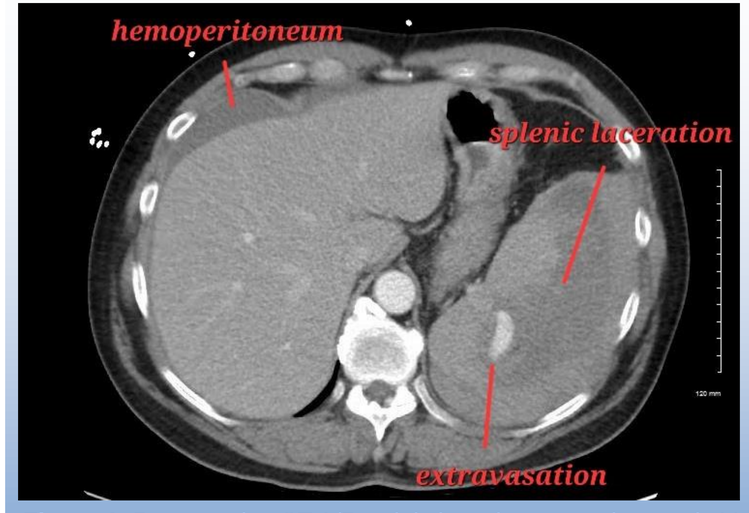


Figure 1. Preoperative CT A/P, axial view, demonstrating grade V splenic laceration with extravasation and hemoperitoneum

Discussion

Babesiosis is a growing concern across the United States as rates of transmission are climbing. This has been partly attributed to climate change, rising deer and tick populations, increasing proximity of humans and vectors, and better diagnostic methods. It can be difficult to recognize babesiosis as the symptoms tend to be non-specific. Fever is one of the consistent features, however malaise, fatigue, headache, cough, and arthralgias with or without hepatosplenomegaly may also be reported.

Discussion Cont.

Laboratory abnormalities may also reflect hemolytic anemia, elevated lactate dehydrogenase, and commonly thrombocytopenia as seen in our patient. Unusually, our patient was older than the typical demographic for splenic rupture but did continue to have severe features with high parasitemia after splenectomy that required exchange transfusion despite proper pharmacotherapy.

The pathology report from the splenectomy did not reveal any significant findings for parasitic infection. The infection was unable to be identified until an experienced pathologist noted the parasite in a blood sample prior to the blood smear after hospital re-admission. This raises concern for detection of uncommon causes for atraumatic splenic rupture prior to further progression of the disease, as they do not have typical manifestations of babesiosis. While the advances in diagnostic techniques have become widely available, a high clinical suspicion must be maintained for those in endemic areas, particularly when atraumatic splenic rupture does not have an identifiable cause.

Conclusion

Splenic rupture occurs in less than 1% of babesiosis cases, partly attributed to the increased erythrophagocytosis within the spleen. Few case reports describe spontaneous splenic rupture occurring secondary to babesiosis in the Upper Midwest region, and it remains unknown to many clinicians as a possible differential. Patients with atraumatic splenic rupture may benefit from parasite screening with a blood smear to prevent further progression and other complications associated with increasing levels of parasitemia.