Progressive Disseminated Histoplasmosis in an Immunocompetent Infant

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Presentation: A 3-month old male presented with eight days of fever. Initial evaluation included blood and cerebrospinal fluid cultures, which were negative. He developed abdominal distension, ultrasonography showed hepatosplenomegaly, prompting admission to our institution. At admission, he was afebrile but tachypneic with both liver and spleen palpable ~6 cm below the costal margin.

Evaluation and Management: Laboratory evaluation revealed pancytopenia and mild transaminitis. A peripheral smear showed no blasts. Blood cultures were obtained. Computed tomography of the abdomen showed hepatosplenomegaly with ascites. Bone marrow biopsy revealed small yeast with narrow-based budding. Histoplasma capsulatum DNA was detected on PCR and blood cultures grew H. capsulatum. Histoplasma serum antigen testing was positive. Testing for human immunodeficiency virus and other immunodeficiencies was negative. He received 19 days of liposomal amphotericin B (LAmB) before completing 12 weeks of itraconazole. Urine Histoplasma antigen levels declined throughout his treatment course.

Discussion: H. capsulatum is a soil-based fungus associated with chicken coops, caves with bat guano, or fallen trees where birds have roosted. Further history taking revealed that our patient had visited relatives who kept chickens. Several nearby trees had been uprooted by heavy storms. Progressive disseminated histoplasmosis (PDH) is classically seen in patients with acquired immunodeficiency syndrome. PDH also occurs in infants when exposure to a large fungal inoculum overwhelms the host immune response. Symptom onset is abrupt, typically with fever and malaise. Hepatosplenomegaly and cytopenias are seen in almost all patients. Transaminitis is common. Clinical guidelines recommend LAmB therapy until clinical improvement is achieved, then transition to oral antifungal therapy. Histoplasma antigen may be detected in urine and serum, and failure of the antigen level to decrease indicates treatment failure.

Conclusion: We report a case of PDH in an immunocompetent infant, successfully treated with LAmB and itraconazole. PDH is a rare manifestation of H. capsulatum infection and should be considered in the infant with unexplained fever and organomegaly.