Disseminated Histoplasmosis in an Immunocompromised Pediatric Patient

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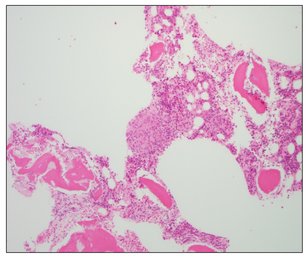
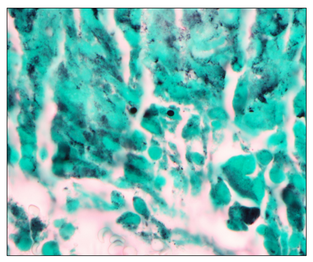
INTRODUCTION

- *Histoplasma capsulatum* is a dimorphic fungi endemic to central and eastern U.S.[1]
- The organism is found in soil contaminated by bird or bat droppings.[1]
- Infection occurs when it is aerosolized and inhaled.[1]
- The disease is a self-limited respiratory infection but can lead to severe pulmonary or disseminated disease in those who are immunocompromised.[2]



Noncaseating granulomas in bone marrow biopsy, H&E stain



Rare fungal yeast forms consistent with *Histoplasma capsulatum* in bone marrow biopsy, GMS stain

CASE PRESENTATION

- 10-year-old female presented to PEC with 10 days of fever (T-max 103.7 ˚F).
- Associated symptoms included fatigue, myalgias, anorexia.
- Denied recent travel or significant exposures.
- Immunizations up to date.
- History of Juvenile Dermatomyositis managed with mycophenolate and methotrexate.

CASE DESCRIPTION

PHYSICAL EXAM

T: 41.7 ˚C **BP**: 85/48 **HR**: 83 **RR**: 20 **SpO2**: 97% RA

- Ill-appearing, no petechiae or rash
- No erythema or exudate in posterior oropharynx, no cervical or inguinal LAD
- Lungs clear to auscultation bilaterally
- Mild RUQ abdominal tenderness, no hepatosplenomegaly

DIFFERENTIAL DIAGNOSIS

Viral infection, macrophage activating syndrome, bacterial infection, fungal infection, tick-borne disease, gastroenteritis, atypical flare of juvenile dermatomyositis

TESTS

WBC: 2.7 **ANC**: 1100 **Hgb**: 11.9 **Plts**: 79 **ALT**: 69 **LDH**: 685 **Ferritin**: 1643 **CRP**: 2.46 mg/dl

- **CXR:** negative for opacifications, or other abnormalities
- **Blood cultures:** no growth
- **Peripheral smear:** leukopenia w/ normal leukocyte morphology
- **Negative autoimmune work-up:** ANA, C3/C4, dsDNA, hepatitis panel
- **Negative infectious work-up:** Respiratory pathogen panel, Gastrointestinal pathogen panel, Fungitell, Galactomannan, CMV, EBV, Tularemia, *Mycoplasma*, *Bartonella*, *Brucella*, and other tick-borne illness
- **Positive infectious work-up:** Histoplasma urine antigen and serum antigen/antibody tests

FINAL DIAGNOSIS & TREATMENT

- Disseminated Histoplasmosis
- Completed two-week course of IV amphotericin B while inpatient and will continue oral itraconazole for 12 months.

DISCUSSION

- Symptoms of disseminated histoplasmosis usually include nonspecific complaints of prolonged fever, fatigue, and anorexia.[2]
- Clinical findings typically include hepatosplenomegaly, pancytopenia, transaminitis, and hyperbilirubinemia.[2]
- 40–50% of immunocompromised pediatric patients with disseminated disease have negative chest x-ray.[3]
- Fungal culture is the gold standard of diagnosis.[4]

CONCLUSION

In an immunocompromised patient, even without obvious exposure, a fever and systemic illness should raise concern for disseminated histoplasmosis.

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