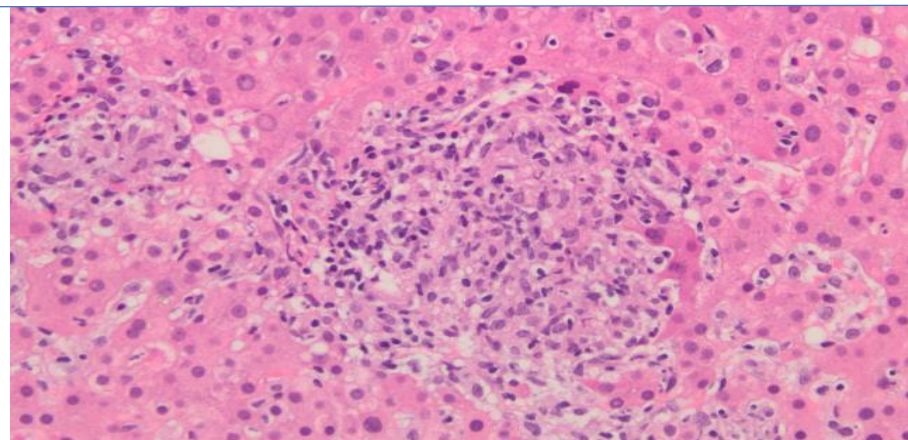


Background

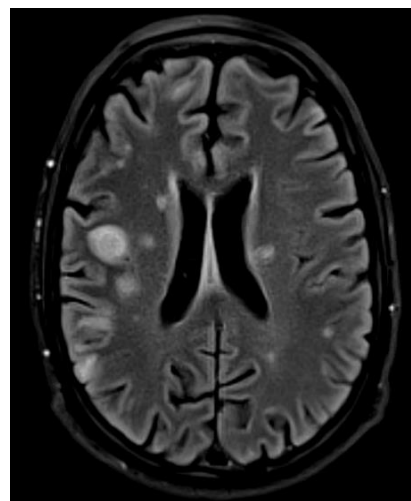
Histoplasma capsulatum is a dimorphic fungus. It is endemic in the Mississippi and Ohio River valley in the United States. We present an interesting case of disseminated histoplasmosis with central nervous system involvement and recurrent hypercalcemia in an immunocompetent patient.

Case Report

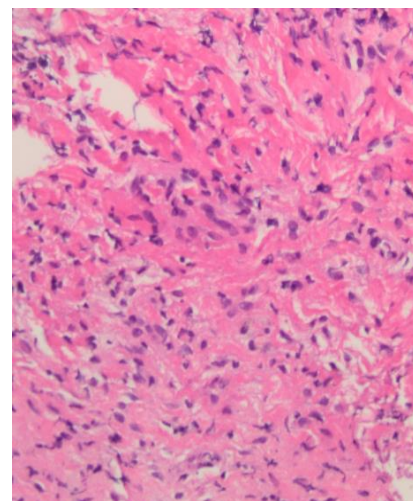
48-year-old man with prior ischemic stroke and coronary artery disease presented with complaints of a constant headache, malaise, and poor appetite for two months. This was associated with progressive shortness of breath for 6 months and 60 pounds weight loss. He had a pet dog, and he worked as a construction engineer. He smoked 4-5 cigarettes per day. On evaluation, he had generalized body aches, joint pain and abdominal discomfort. Blood samples revealed hypercalcemia with a corrected calcium level of 12 mg/dl (8.5 - 10.5 mg/dl) and hyperglycemia 495 mg/dl (70 - 100 mg/dl). Further work up revealed 4th generation HIV negative, CRP was elevated to 10.3 mg/L, intact parathyroid hormone level (PTH) was < 6.3 pg/ml and PTHrP (parathyroid hormone-related peptide) was elevated to 5.20. CT chest demonstrated centrilobular ground-glass nodularity. Hepato-splenomegaly was noted on contrast CT scan of the abdomen. MRI brain revealed several small foci of T2/flair hyper-intensities throughout the subcortical white matter of both cerebral hemispheres. LP was done,



Histoplasma capsulatum-induced liver granuloma



MRI Brain with subcortical white matter T2/flair hyper-intensities



Histoplasma capsulatum-induced necrotizing lung granuloma

CSF Histoplasma antigen was elevated to 2.14 ng/ml, and his CSF Histoplasma mycelial antibody titer was 1:32. These results were consistent with disseminated histoplasmosis with CNS involvement. He was treated with 6-week course of IV liposomal amphotericin B followed by 1-year oral itraconazole, dose adjusted based on itraconazole levels.

Differential Diagnosis

- Malignant hypercalcemia
- Neuro-sarcoidosis
- Disseminated histoplasmosis with central nervous system involvement
- Central Nervous System (CNS) Tuberculosis
- Granulomatosis with polyangiitis
- Lymphoma

Diagnostics

- Histoplasma antigen is present in up to 66% of CSF samples with CNS Histoplasmosis.
- Sensitivity of the CSF Histoplasma antibody ranges from 80% to 89%

Learning Points

- Maintain a high index of suspicion for CNS histoplasmosis in immunocompetent hosts from an endemic area when they present with compatible neurologic symptoms.
- Obtain appropriate serologic studies on CSF for the diagnosis of CNS histoplasmosis.