

Disseminated Histoplasmosis - An Incidental Finding

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Abstract: *Histoplasma capsulatum*, a dimorphic fungus, infects humans through inhalation of microconidia, transforming into yeast in the alveoli. We report a 42-year-old woman with type II diabetes and hypertension who presented with decreased urine output, fatigue, and edema. Investigations revealed pancytopenia, renal dysfunction, and proteinuria. Bone marrow biopsy confirmed *Histoplasma capsulatum* by PAS staining. This case emphasizes considering histoplasmosis in patients with chronic illness and pancytopenia, even in non-endemic areas, highlighting the diagnostic importance of bone marrow examination for timely management.

Keywords: Disseminated Histoplasmosis, Pancytopenia, Bone Marrow Biopsy

1. Introduction

Histoplasma capsulatum is indeed an environmental dimorphic fungus, meaning it exists in two forms: a mold (in the environment) and a yeast (in the host). Human infection typically occurs when the mold form, which produces infectious microconidia or hyphae fragments, is inhaled into the lungs. Once in the alveoli (small air sacs in the lungs), these fungal particles transform into the yeast form of *Histoplasma capsulatum*.³

The transformation from mold to yeast can occur both inside and outside of phagocytes (cells that engulf pathogens), which is characteristic of dimorphic fungi.³ In immunocompetent individuals, the infection may resolve without causing significant symptoms.¹ Histoplasmosis, culture remains the gold standard for the laboratory diagnosis; however, this fungus grows slowly, taking a long time 2 to 3 weeks or may take up to 8 weeks. Therefore, some other methods such as bone marrow examination play an essential role in rapid identification.²

2. Case Report

A 42-year-old female with a history of type II diabetes and hypertension presented with 10 days of decreased urine output, fatigue, blurred vision, and pedal swelling. She had been on insulin and antihypertensives for five years and had received a blood transfusion 17 days prior for anemia.

Examination revealed pallor, pedal edema, respiratory rate of 35, blood pressure of 160/90 mmHg, blood sugar of 320 mg/dL, and diabetic retinopathy.

Investigations showed pancytopenia (Hb 5.8 g/dL, platelets 70,000/ μ L, WBC 2000/ μ L), proteinuria, and renal dysfunction (urea 270 mg/dL, creatinine 7 mg/dL).

Abdominal ultrasound revealed contracted kidneys & progressive splenomegaly. Despite dialysis improving creatinine level, her condition worsened with shortness of breath and altered sensorium. Bone marrow examination identified *Histoplasma capsulatum* with positive PAS and GMS staining.

Diagnosed with disseminated histoplasmosis, the patient deteriorated and passed away within 10 days.

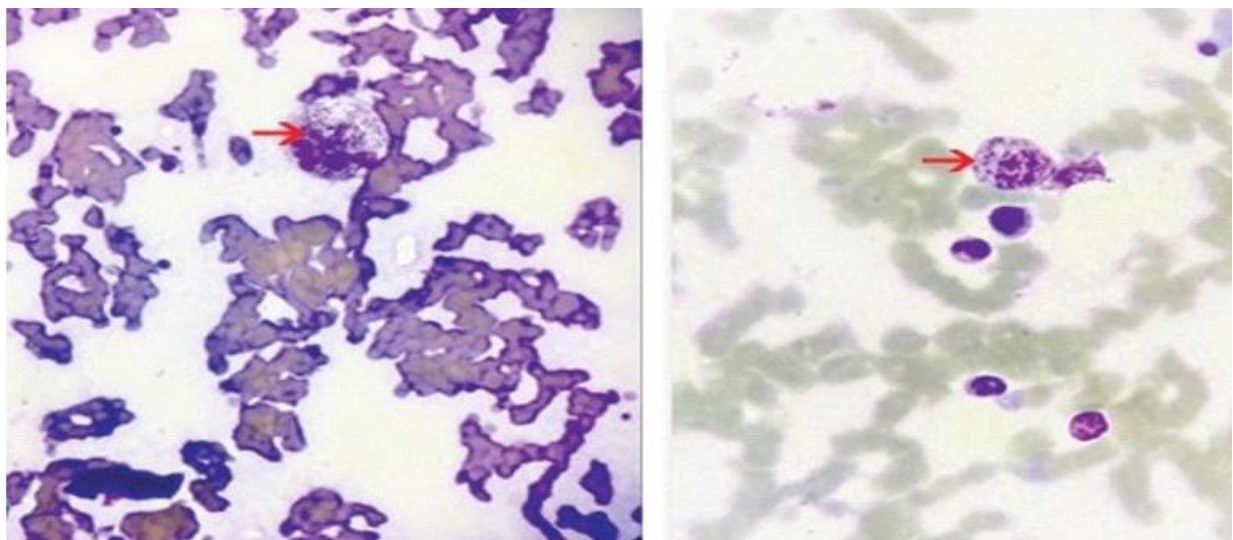


Figure 1: H&E stain showing intracellular bodies (arrow) in macrophages at 40x and 100x

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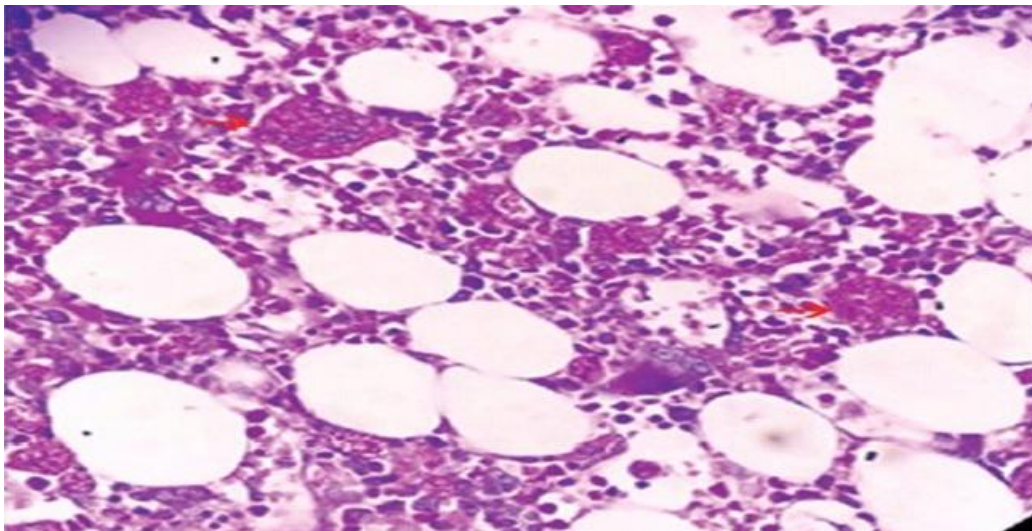


Figure 2: PAS positive histoplasma (arrow) at 40x

3. Discussion

We received bone marrow aspirate & biopsy. PAS stain was done to visualize yeast forms of Histoplasma. Histoplasma infection, often affecting women, lacks specific age or immune status criteria. It should be considered in patients with prolonged fever and pancytopenia, especially those with chronic kidney disease, regardless of geography.^{1,2}

Delayed diagnoses have proven fatal. Recent cases from dry regions challenge its restriction to humid areas, underscoring the need for prompt diagnosis and further research into its global burden.^{2,3}

References

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