



DISSEMINATED HISTOPLASMOSIS IN AN APPARENTLY IMMUNOCOMPETENT HOST

Dr. C. Arshad Akeel*

MD (Gen Med), FRCP (Glasg), FRCP (Ireland), FRCP (Edin), FACP (USA), DABTM(USA), FCCP(USA), FICA (USA), Senior Consultant, Department of Internal Medicine, Apollo Hospitals, Greaves Road, Chennai Adjunct Professor, The Tamil Nadu Dr.MGR Medical. *Corresponding Author

Dr. Kartik Ramanathan

DNB General Medicine Resident, Apollo Hospitals, Greaves Road, Chennai.

ABSTRACT Histoplasma capsulatum is a fungus that causes disseminated histoplasmosis predominantly in immunocompromised hosts. In immunocompetent individuals with low-level exposure, most Histoplasma infections are either asymptomatic or mild and self-limited. Common risk factors for disseminated histoplasmosis are AIDS (CD4+ T cell count, <200 cells/microL), extremes of age, and immunosuppressive medications in post-transplant patients and those with autoimmunity. Fungal cultures are the gold standard in diagnosis and other tests are fungal stains from biopsy samples, Histoplasma antigen detection in body fluids, and Serologic tests. The preferred treatment options include liposomal Amphotericin B and Itraconazole.

KEYWORDS : DISSEMINATED HISTOPLASMOSIS, HISTOPLASMA CAPSULATUM, ITRACONAZOLE, PAS STAIN, ENLARGED ADRENAL GLANDS, AMPHOTERICIN-B

INTRODUCTION:

Histoplasmosis was first described by Samuel Darling, an American physician. He described the disseminated form of the disease while working in Panama. Two varieties of *H. capsulatum* are pathogenic to humans, *H. capsulatum* var. *capsulatum* and *H. capsulatum* var. *duboisii* [4].

In India, the disease is endemic in the eastern part of the country [1]. Progressive disseminated histoplasmosis usually presents with fever, malaise, hepatosplenomegaly, and lymphadenopathy [4]. We report a case of disseminated histoplasmosis in an apparently immunocompetent host.

CASE REPORT:

A 38-year-old male from the Indian state of West Bengal presented with a history of dyspnea on exertion for the past 3 months. He also complained of occasional palpitations and bilateral pedal edema. There was a history of dyspepsia with loss of appetite, a significant weight loss of about 10 kgs in 2 months and multiple joint pains.

His past medical history was notable for type 2 diabetes mellitus, diagnosed 3 years back, for which he was on oral anti-diabetic medications.

On examination, he was a lean individual with a body mass index of 17.65 kg/m². He had no pallor, icterus or pedal edema. His vital signs were within the normal range and his chest was clear on auscultation. Bilateral axillary and inguinal lymph nodes were palpable.

Ultrasound of the abdomen was done which showed hypo to isoechoic shadows extending from the posterior margin of the liver and in the superior aspect of the pancreas, splenomegaly and mild ascites. The chest Roentgenogram was normal. Blood investigations showed anemia with microcytic and hypochromic RBCs and elevated ESR. The total counts, platelet counts, and renal and hepatic functions were normal.

Following the initial set of investigations, a Contrast-enhanced CT of the abdomen was done which showed bilateral enlarged adrenal glands and hepatosplenomegaly with minimal free fluid in the pelvis. A fine-needle aspiration biopsy from the left axillary lymph node was done which showed ill-formed granuloma.

Tests for HIV, HCV and HbsAg were negative. HIV quantitative RT PCR was negative. A PAS stain of the sample obtained by fine-needle aspiration showed the presence of fungal spores suggestive of *Histoplasma capsulatum*. He was started on oral itraconazole 200 mg three times a day for 3 days followed by twice a day for one year.

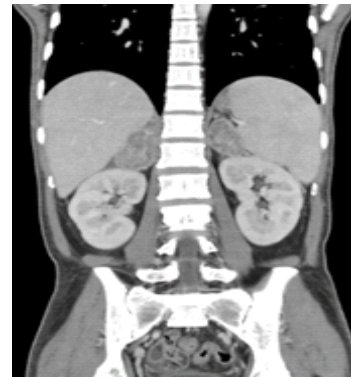


Figure 1 CT Abdomen showing enlarged Adrenal glands

DISCUSSION: Histoplasmosis is a systemic fungal infection seen worldwide, it is non-contagious, caused by a thermally dimorphic fungus, *Histoplasma capsulatum* which thrives in warm and humid environments such as soils enriched with nitrogenous compounds and phosphates derived from avian excreta and bat guano. *Histoplasma* is found in the environment as microconidia and short hyphal fragments, which convert rapidly to the yeast form upon entering the alveoli. The infection now may be contained in the host tissues or may disseminate through the bloodstream and lymphatics to other organs and cause disseminated histoplasmosis [1].

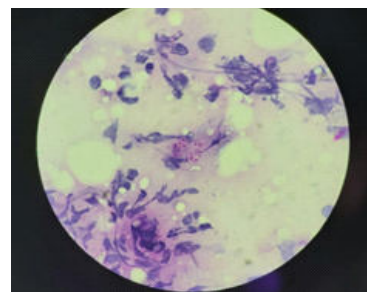


Figure 2 PAS stain of the FNAB Sample Showing Encapsulated Fungi

It was first described by Samuel Taylor Darling in 1906 in the viscera and bone marrow of a patient suspected to have died from tuberculosis [2]. The first case of histoplasmosis in India was reported by Panja and Sen from Kolkata in 1954 [3]. Histoplasmosis in humans has two clinical entities: Histoplasmosis capsulati caused by *H. capsulatum*

var. capsulatum, endemic in the Eastern United States and Latin America and Histoplasmosis duboisii caused by *H. capsulatum* var. *Duboisii*, prevalent in Africa and Southeast Asia [1]. In India, the disease is endemic in the eastern part of the country with most cases reported from Gangetic West Bengal [1]. Clinically, disseminated histoplasmosis is very similar to non-infectious diseases like lymphoma and infections like tuberculosis [6].

The development of disease associated with the initial dissemination of *H. capsulatum* is dependent on the host. Patients who are immunosuppressed and unable to develop effective cell-mediated immunity against the organism are likely to manifest symptomatic disease during acute dissemination. This includes patients with AIDS, transplant recipients, those with hematologic malignancies, and those on corticosteroids. Infants, presumably because of the immaturity of their cell-mediated immune system, are a special group that develops severe life-threatening infection when exposed to *H. capsulatum*. A person who develops an immunosuppressive condition years after leaving the area of endemicity may reactivate a focus of infection and, through that mechanism, develop severe disseminated histoplasmosis [4].

Our patient was a resident of West Bengal where the majority of the *Histoplasma* cases are reported followed by Uttar Pradesh [1]. A contrast-enhanced CT abdomen showing bilaterally enlarged adrenal glands and PAS staining of the fine needle aspiration sample showing encapsulated fungi was diagnostic of disseminated histoplasmosis.

For the treatment of Histoplasmosis, Amphotericin B and itraconazole are the standard drugs available with evidence showing Posaconazole being at least as effective as Amphotericin B [5]. Our patient was started on Itraconazole. On follow-up after 1 month of initiating treatment, he had improvement in his symptoms.

DECLARATIONS:

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Conflict of interest: None declared

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