A Case Of Disseminated Histoplasmosis In An Immunocompetent Individual

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Abstract

Histoplasmosis has a wide spectrum of manifestations ranging from asymptomatic infection to systemic dissemination, depending on the intensity of exposure and immune status of the exposed individual. We report a case of disseminated histoplasmosis in a 57 year old male from a non endemic area, who had fever, lymphadenopathy, multiple subcutaneous swellings and bilateral adrenal lesions at presentation. Diagnosis was made by demonstrating Histoplasma in the culture of lymph node aspirate. But no features of underlying immunodeficiency could be found in this individual even after an extensive search. Patient was successfully treated with Amphotericin B and Itraconazole.

Keywords: Disseminated Histoplasmosis; Amphotericin B; Itraconazole

Introduction

Histoplasmosis is an invasive mycosis which usually produces asymptomatic or self limited infection in immunocompetent individuals especially in non endemic areas, where the level of exposure is expected to be low. But chronic progressive disseminated histoplasmosis can rarely occur even in immunocompetent adults. The diagnosis of this condition is often overlooked as the presentation may closely mimic more common diseases like tuberculosis and disseminated malignancies.

Case Report

We report a 57 year old male, who presented with insidious onset gradually progressive multiple painless swellings over neck of 5 months duration (Figure 1). This was associated with on and off low grade fever during these 5 months, present at least three days in a week and with a significant weight loss of 20 kg, with preserved appetite. There was no history of chronic cough, any other swellings, palpitations, heat intolerance or urinary symptoms.

He was not a known case of diabetes mellitus or was not on treatment for any other illness. There was no past history of recurrent infections. He had undergone dental extraction two weeks prior to his onset of symptoms. He was a chronic smoker and alcoholic. There was no history of any high
risk behavior, travel outside kerala or exposure to any pets or animals. There was no family history of any similar or significant illness. On examination, he was emaciated, had a body mass index of 20.8. There was no pallor, clubbing or icterus. There were multiple firm, discrete, nontender lymph nodes of maximum size of 3 cm, involving bilateral submandibular and deep cervical groups as well as in both axilla. There were few soft, subcutaneous swellings of 3 x 2 cm noted over neck (Figure 1).

Liver was palpable 2 cm below right costal margin and there was no splenomegaly. Cardiovascular and chest examination were normal. There were no focal neurological signs or neck stiffness and ocular fundus examination was normal.

Routine investigations showed hemoglobin 14.1 g%, hematocrit 41%, MCV 88 fL, RDW 14, total count 10400 cells/mm3, differential count N68 L20, platelet count 3.45 lakhs/mm3, ESR 75 mm/1st hour, random blood sugar 134 mg/dl, fasting blood sugar 96 mg/dl, blood urea 26mg/dl, serum creatinine 1mg/dl, serum sodium 129 meq/L and serum potassium 4.7 meq/L. Liver and Thyroid function tests and peripheral smear examination were within normal limits. Screening for retrovirus was negative, Mantoux test was negative and Chest X-ray was normal. Fine needle aspiration from cervical lymph node showed multiple yeast cells within the macrophages which on special staining showed uptake with Giemsa and Gomori methenamine silver but was PAS (periodic acid Schiff) negative (Figures 2, 3).

Figure 1: Submandibular lymph node and subcutaneous swellings

Figure 2: Yeast like inclusions within the macrophages on FNAC lymph node specimen
Hence a repeat aspirate was done which when cultured on Sabouraud dextrose agar at room temperature produced yellow tan colonies and on microscopic examination showed mould forms with thick walled double layered macroconidia having tuberculate projections, a finding consistent with histoplasma (Figures 4,5).

Further confirmation of histoplasmosis was done by incubating it at 37 degrees Centigrade on an
enriched medium (brain heart infusion agar to which blood was added) whereby converting it back to the yeast form, demonstrating its dimorphic nature (Figures 6, 7).

**Figure 6:** Growth on enrichment medium (Brain heart infusion agar with blood) incubated at degrees Centigrade

**Figure 7:** Demonstration of yeast form (Lactophenol cotton blue staining) on incubation at 37 degrees Centigrade

To look for the extent of dissemination CT scanning of thorax and abdomen were done which showed multiple paraaortic and periportal lymphadenopathy and heterogeneously enhancing mixed density lesions involving both adrenals (Figure 8).

**Figure 8:** CECT abdomen showing bilateral adrenal lesions and paraaortic lymph nodes

There were no clinical or biochemical features of hypoadrenalism and serum fasting cortisol was 18.25 micro gram/dL. Work up was done for underlying immunosuppressive state but was negative (HbA1c was 6.9%, screening for retroviral infection was negative, normal CD4 count and there was
no evidence of any malignancy). So a final diagnosis of disseminated histoplasmosis in an immunocompetent individual from a non-endemic area was made. He was managed with Amphotericin B (3mg/kg/day) injection for 2 weeks and then started on oral itraconazole at 200 mg twice daily, with a plan to continue it for one year.

Discussion

Histoplasmosis is caused by Histoplasma capsulatum, a thermal dimorphic fungus and the disease is particularly notable for its endemicity in North, Central and South America due to the humid and acidic nature of the soil enriched with bird and bat droppings. Infection occurs following inhalation of microconidia which gets transformed to yeast form within the macrophages. Adequate cellular immunity controls the progression of the disease in immunocompetent host [1]. The clinical spectrum includes asymptomatic infection, acute pulmonary histoplasmosis, chronic cavitory histoplasmosis, granulomatous mediastinitis and progressive disseminated histoplasmosis. Dissemination can involve bone marrow, spleen, liver, adrenal glands and mucocutaneous membranes. Although acute dissemination most often occurs in immunosuppressed [2] (eg. AIDS, solid organ transplantation, treatment with tumor necrosis factor-alpha inhibitors) and those at the extremes of age, chronic progressive disseminated histoplasmosis can occur even in immunocompetent individuals. Progressive disseminated histoplasmosis is treated with lipid formulation of amphotericin B (3-5 mg/ kg/d) for 1-2 wk, followed by itraconazole (200 mg twice daily) for 12 months [3]. The disease is not rare in India. The first case of disseminated histoplasmosis was reported in 1954 from Kolkata by Panja and Sen [43] and the largest series so far reported in the country is from Delhi which included a case series of 37 patients [4]. From our institution we have described a case of Histoplasmosis presented as midline tongue ulcer, bilateral adrenal involvement with hypoadrenalism [6].

In conclusion, progressive disseminated histoplasmosis can occur even in immunocompetent individuals. The diagnosis is not uncommon even in non endemic countries like India. Hence the diagnosis of this condition requires a high index of suspicion, recognition of the common modes of presentation, and familiarity with the appropriate diagnostic tests.

References


