

# Histoplasmosis in an immunocompetent adult

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## ABSTRACT

Histoplasmosis is a fungal infection of the skin and lungs, often involving multiple organs. They are opportunistic mycoses usually in HIV-positive patients. Herein, we report the case of a 51-year-old immunocompetent adult. On examination, the patient was generally unwell and had no fever. Multiple subcutaneous nodules were noted. These nodules were of variable size, ulcerated in places, umbilicated in appearance, and painful to the touch. They were located on the head, nose, back, thighs, and arms. Bilateral symmetrical axillary lymph nodes were firm, painless, and mobile. Tzanck cytodiagnosis showed birefringent cells in all fields. A chest X-ray showed accentuated vascular patterns and basal pleurisy. Skin and lymph node biopsies were consistent with *Histoplasma capsulatum duboisii* histoplasmosis. The patient was treated with itraconazole. After eight months of treatment, we noted complete healing of the lesions.

**Key words:** Cutaneous histoplasmosis, Immunocompetent, Disseminated

## INTRODUCTION

Histoplasmosis is a fungal infection with cutaneous and pulmonary manifestations, often involving several organs. Nitrogen-rich soil is the main reservoir of *Histoplasma capsulatum*. Bird and bat droppings increase the level of nitrogen in the soil and are, therefore, often contaminated by *Histoplasma capsulatum*, which generally presents as a disseminated mycosis in HIV-positive patients. There are two variants: *Histoplasma capsulatum var capsulatum* and *var duboisii*. In sub-Saharan Africa, *Histoplasma capsulatum duboisii* is the most frequently reported variant. It poses a diagnostic challenge in non-specialist settings due to its clinical polymorphism. Herein, we report the case of a 51-year-old immunocompetent adult.

## CASE REPORT

A 51-year-old farmer living in San, a health district 400 kilometers far from Bamako, presented with ulcerative and crusted lesions on his back. He had

no notable medical history. As a farmer practicing composting with poultry droppings and plant materials, he had been experiencing this condition for a year. Initially, nodular lesions accompanied by episodes of cough were observed. The patient had received intermittent treatments with antibiotics and mucolytics. Over time, the nodules became ulcerated, associated with significant weight loss. Intense costo-vertebral pain led him to seek consultation at the Dermatology Hospital of Bamako. Upon examination, he exhibited general deterioration (BMI 19 kg/m<sup>2</sup>), was afebrile, and assumed a posture suggestive of pain. A dermatological examination revealed multiple subcutaneous nodules, varying in size from one to three centimeters in diameter, some depressions, centrally ulcerated with an umbilicated and fleshy appearance. The nodules were tender to touch and located on the head, nose wing, back, thighs, and arms (Figs. 1 – 2). The examination of the spleen–ganglion system revealed bilateral and symmetrical firm, painless, and mobile axillary adenopathies. The patient had wheezing on pulmonary auscultation, a hoarse voice, and intermittent cough. The remainder of the

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clinical examination was unremarkable. Leishmaniasis was initially considered due to these lesions, yet the search for Leishman's bodies was negative. Tzanck cytodagnosis showed birefringent cells in all fields, suggestive of histoplasmosis (Fig. 3a). A chest X-ray noted the accentuation of vascular markings and basal pleurisy. A thoracoabdominal CT scan was normal. Laboratory tests showed hypoalbuminemia. Skin and lymph node biopsies supported the diagnosis of *Histoplasma capsulatum duboisii* histoplasmosis

(Fig. 3b). The patient was treated with itraconazole at a dose of 200 mg per day. A week later, he complained of intense costo-vertebral pain, leading to hospitalization. A second chest CT scan revealed pleurisy associated with hypoalbuminemia. The itraconazole dose was gradually adjusted based on biological tolerance. Significant improvement was observed after a dose of 400 mg per day for a month. The patient was followed every three months, and after eight months of treatment, the complete healing of the lesions was noted.

## DISCUSSION

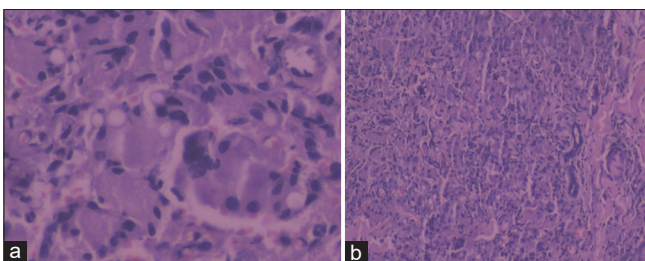
This was a case of disseminated histoplasmosis in an immunocompetent adult. Disseminated histoplasmosis typically affects the lungs initially, followed by the secondary involvement of lymph nodes, bones, and skin [1,2]. It is usually described in immunocompromised individuals, often associated with HIV infection [3,4]. Some authors describe cases of cutaneous histoplasmosis after the introduction of immunosuppressive treatment [5,6]. However, our patient's malnutrition, reflected by hypoalbuminemia and weight loss, could also lower immunity and predispose to infection. Nigerian studies have reported severe malnutrition as a risk factor for the disease. In Costa Rica, a case of disseminated histoplasmosis in a malnourished child has been reported [7]. Bird and bat droppings increase the level of nitrogen in the soil and are, therefore, often contaminated by *Histoplasma capsulatum*. Inhalation of infectious spores, present in the droppings of infected birds or bats, is the usual mode of transmission [8]. In our patient, the probable source of contagion could have been the collection of droppings for composting, an activity he had been engaged in for many years. Trauma may also be a source of cutaneous involvement, with repeated microtrauma causing local inoculation. In Latin America, isolated genital involvement has been reported in a farmer [9]. In some cases, the initial pulmonary involvement is asymptomatic [2]. In our patient, this involvement was symptomatic and persistent for several years. Clinical presentation in our practice may mimic various dermatoses, such as cutaneous leishmaniasis, cryptococcosis, or even cutaneous tuberculosis. According to the literature, cutaneous involvement is the most frequent, followed by lymph node and bone involvement [2,3]. Pulmonary involvement, although often initial, is transient. However, when



**Figure 1:** (a) Ulcerative nodule on the nose. (b) Ulcerative nodule on the neck and occiput.



**Figure 2:** (a) Attenuation of the nose nodule after treatment. (b) Attenuation of the neck and occiput nodules after treatment.



**Figure 3:** (a) Numerous ovoid bodies of *Histoplasma* seen at the left and middle and giant cell with a spore inside. (b) Histology showing an ulcerated lesion without the epidermis consisting of a fairly dense inflammatory giganto-cellular granuloma with numerous rounded birefringent formations typical of African histoplasmosis.

present, it may suggest pulmonary tuberculosis based on the epidemiological context, leading to delayed diagnosis and complications.

The main method of prevention is to avoid exposure when disinfecting buildings that have housed birds or bats, spraying the floor with 3–5% formalin. The use of protective masks is also recommended.

## CONCLUSION

Our case was unusual in that there was no HIV immunodepression, malnutrition probably being a risk factor. In tropical regions, the presence of chronic ulcerative lesions and scabby lesions should prompt consideration of cutaneous histoplasmosis. Itraconazole remains the preferred treatment option despite potential hepatotoxicity. Further research is needed in rural areas of our country to study spores in the environment.

## Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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