



Histoplasmosis Due to *Histoplasma Capsulatum* Var. *Duboisii*: Diagnostic Difficulties in Decentralized Areas

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Abstract

Introduction: Histoplasmosis caused by *Histoplasma capsulatum* var. *duboisii* is a deep mycosis that is rampant in Africa. Clinical manifestations are dominated by skin involvement. It is a condition that sometimes poses diagnostic and therapeutic problems.

Observation: We report the case of an 81-year-old non-smoking, non-alcoholic patient who presented with polymorphic cutaneous lesions in the form of gums of variable size disseminated on the trunk and the limbs at the stage of rawness or softening, an ulcerative lesion crusty measuring 5 cm on its longest axis sitting at the level of the abdomen and an ulceration measuring 6 cm on its longest axis with purulent and hemorrhagic background with raised edges and indurated base at the level of the right subclavicular region. This picture had been evolving for 9 months in a context of impaired general condition and exertional dyspnoea at stage IV. Pulmonary examination revealed bilateral pleural effusion syndrome. Examination of the lymph nodes revealed no superficial adenopathy. African histoplasmosis was suggested. Retroviral serology and syphilitic serology were negative. The thoraco-abdomino-pelvic computed tomography showed a tumoral process at the apical level of the right lung at the level of the ventral segment of the upper lobe and multiple secondary localizations in the right mediastino-hilar lymph nodes under the skin and bone. The diagnosis of histoplasmosis was retained by the pathological examination of the skin biopsy, which was in favor of histoplasmosis and mycology confirmed histoplasmosis due to *Histoplasma capsulatum* var. *duboisii*. The evolution was marked by the death of the patient before the treatment.

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Conclusion: African histoplasmosis remains a rare condition although a few cases are reported in the literature. Its clinical polymorphism often confuses practitioners.

Keywords

Cutaneous Histoplasmosis; Thiès; Senegal

Introduction

Histoplasmosis is a deep mycosis due to *Histoplasma capsulatum* of which 2 varieties have been isolated: *Histoplasma capsulatum* variety *capsulatum* responsible for histoplasmosis of worldwide distribution and *Histoplasma capsulatum* variety *dubosii* responsible for African histoplasmosis [1]. The latter is rare and is mainly manifested by cutaneous involvement that can be polymorphic, thus posing diagnostic and therapeutic difficulties [2]. We report the case of a late diagnosis of histoplasmosis probably associated with a lung tumor.

Observation

It was an 81-year-old patient, married, farmer by profession, hospitalized on March 10, 2020 in the internal medicine department for nodular lesions fistulized in places located at the level of the trunk and the root of the upper limbs evolving from 09 months. The interrogation had found a notion of herbal medicine based on decoction of plants of unknown nature, chronic constipation, physical asthenia, non-selective anorexia and dyspnoea of effort at stage IV without notion of chronic cough. Our patient was neither a smoker nor an alcoholic and there was no notion of tuberculosis contagion in the entourage. On examination, consciousness was clear, the general condition was altered with pale conjunctival mucous membranes, edema on the back of the feet taking the cup. The pulse was 75 beats/min for a temperature of 36°C. His weight was 40 kg for a height of 166 cm, i.e. a body mass index of 14.51 kg/m². The blood pressure was 90 mmHg/50 mmHg. The dermatological examination had found nodular lesions in the form of gums of variable size disseminated on the trunk and the limbs at the stage of crudity, softening in places. The mucous membranes and skin appendages were normal. Pulmonary examination revealed bilateral pleural fluid effusion syndrome. Examination of other devices was normal. The diagnostic hypotheses were: multifocal tuberculosis, African histoplasmosis. Complementary examinations found: an accelerated sedimentation rate (61.05 mg/l) a normochromic normocytic anemia with a hemoglobin level of 6.4 g/dl, a MCHC of 32.1 g/dl and a VGM of 86.9 fl. Retroviral and syphilitic serologies were negative. The chest

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X-ray showed a right basal pleural effusion. The puncture of the pleural fluid had shown a liquid of citrine yellow appearance on macroscopy. The cyto-bacteriological examination of the puncture liquid was not carried out. The Xpert gene carried out on the puncture fluid and the gastric secretions had not found any *Mycobacterium tuberculosis*. Thoraco-abdomino-pelvic Computed Tomography (CT) revealed a tumor process at the apical level of the right lung at the level of the ventral segment of the upper lobe and multiple secondary locations in the right mediastino-hilar lymph nodes under the skin and on the bone. The pathological examination of the skin biopsy sample found a dense, well-circumscribed granulomatous infiltrate in the form of a nodule within the deep dermis, polymorphic with numerous multinucleated giant cells, sometimes foamy, and plasma cells. Within the granuloma, on Giemsa staining, numerous small, ovoid bodies can be seen sitting both inside and outside the macrophages corresponding to *Histoplasma capsulatum* yeasts (Fig. 1-3). Mycology confirmed the diagnosis of *Histoplasma capsulatum* variety *dubosii*. The evolution was unfavorable, marked by the death of the patient 8 days after his hospitalization, before the start of the specific treatment.



Figure 1: Nodules of different sizes disseminated on the anterior face of the trunk.



Figure 2: Right subclavicular ulcerative lesion.

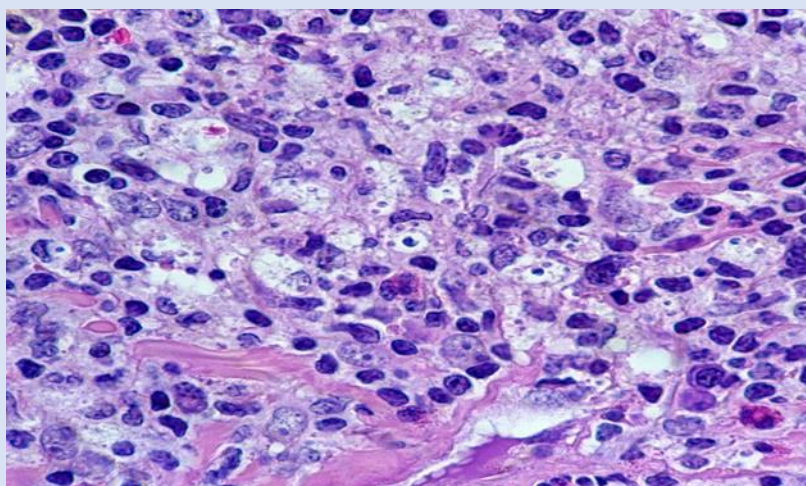


Figure 3: Ovoid yeasts within macrophages.

Discussion

African histoplasmosis occurs on the African continent between $+20^{\circ}$ north latitude and -20° south latitude, and in Madagascar [3]. The prevalence of African histoplasmosis is unknown. Most of the studies reported have been in the form of clinical cases. In Africa over a period of 65 years (from 1952 to 2017), 162 cases of histoplasmosis due to *Histoplasma capsulatum* variety *dubosii* have been documented [4]. In Senegal, from 1998 to 2019, five cases have been described [2,5-7]. During African histoplasmosis, cutaneous involvement dominates and is characterized by its clinical polymorphism [1,2,8]. Our patient presented with nodular lesions and ulcerations. Apart from the skin, cases of lymph node histoplasmosis have been reported by most authors [7,9-11]. However, the first case of lymph node histoplasmosis with a caseous appearance on macroscopy was reported by Diadie, et al. [2]. In our patient we did not find superficial adenopathies. As for bone damage, the frequency of these localizations of African histoplasmosis was already reported in the work of Drouhet, et al. [12,13]. The topography of the bone locations is variable and the entire skeleton may be involved [13]. In our patient, the bone involvement found could be linked to histoplasmosis or to metastases of a probable lung cancer, the latter evoked by the CT scan thoraco abdomen pelvic. Had it not been for the poverty of our technical platform and the early death of our patient, a biopsy performed during a bronchial fibroscopy could have confirmed the diagnosis of cancer. However, the association of African histoplasmosis with cancer has been reported by Seck, et al. It was associated with primary liver cancer and the evolution was fatal after 03 months [14]. Visceral damage in disseminated forms of African histoplasmosis is known and has been described by several authors [2,15-17]. African histoplasmosis of the liver or spleen is rare and serious. The evolution is most often fatal [2]. Arlet, et al., reported the first case of ascites in African

histoplasmosis [18]. A second case was reported in Mali by Minta DK, et al. [13]. Isolated pulmonary forms of Histoplasmosis due to *histoplasma var dubosii* have been rarely reported [17,19]. In our patient, apart from the probable pulmonary involvement, we did not find any other visceral localizations. Apart from the advanced age of our patient, no other immunosuppression could be proven. However, the possibility of an association with lung cancer which could be the bed of histoplasmosis cannot be excluded. Cases of African histoplasmosis in immunocompetent subjects have already been reported [8,13,15]. The difficulties associated with the diagnosis of histoplasmosis in the tropics have been highlighted by several authors [13]. This is the case for our observation which is illustrated by the diagnostic delay which would be linked to the ignorance of the pathology. The latter is due to several factors such as the delay in consultation in the reference centers, the clinical polymorphism responsible for the diagnostic error and the rarity of the pathology [5].

Conclusion

African histoplasmosis is a rare and misunderstood condition, although a few cases have been reported. Its diagnosis can be difficult in the tropics because of its clinical polymorphism and a poor technical platform.

Conflict of Interest

The authors declare that they have no conflict of interest.

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