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General Surgery

Hystoplasmosis with Histoplasma Duboisii in the General Surgery Department at the Hospital of the District of the Commune IV

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Abstract **Case Report**

Histoplasmosis is a deep cosmopolitan mycosis due to dimorphic fungi belonging to the genus Histoplasma. We distinguish the American histoplasmosis, with small form due to Histoplasma capsulatum var. capsulatum (H. capsulatum), and large-form African histoplasmosis, due to H. duboisii. The latter is endemic in West and Central Africa and Madagascar. African histoplasmosis is a rare deep mycosis, due to Histoplasma Capsulatum var.duboisii. Clinical presentation may be localized with isolated infections of the skin, bones or lymph nodes or disseminated with multiple skin lesions present throughout the body, subcutaneous abscesses, enlarged lymph nodes, liver and spleen, and enlargement of visceral organs. It has diagnostic similarities with pathologies such as lymph node tuberculosis, cutaneous cryptococcosis and certain malignant diseases of the skeleton. The disease sometimes poses therapeutic difficulties. We report a histoplasmosis case at Histoplasma Capsulatum var.duboisii, with multiple localization in a 22-year-old student.

Keywords: Histoplasmosis, Histoplasma, Capsulatum, Var.Duboisii, Multiple Localization.

1. INTRODUCTION

Histoplasmosis is a deep cosmopolitan mycosis due to dimorphic fungi belonging to the genus Histoplasma. We distinguish the American histoplasmosis, with small form due to Histoplasma capsulatum var. capsulatum (H. capsulatum), and large-form African histoplasmosis, due to H. duboisii. The latter is endemic in West and Central Africa and Madagascar [1].

African histoplasmosis is a rare deep mycosis, due to Histoplasma Capsulatum var.duboisii [2].

According to (Tchin Darré) [3], they are rarely described in Africa. Indeed, and that the actual frequency of the African form is not known, because most studies have focused on clinical cases.

D. Ndiaye [1], reported that, the frequency of infection is not known, but histoplasmin studies, on IDR (intradermoreaction to tuberclin) show a prevalence of 6% in endemic areas. Boh Fanta Diané [4], reported that, The rarity of cases could be related to a sub-diagnosis.

Clinical presentation may be localized with isolated infections of the skin, bones or lymph nodes or disseminated with multiple skin lesions present throughout the body, subcutaneous abscesses, enlarged lymph nodes, liver and spleen, and enlargement of visceral organs Amechi Uchenna Katchy [5].

For unknown reasons, although infection with HIV and H. capsulatum var. duboisii coexist in Africa, this coinfection remains rare, Pierre loulergue [6].

It has diagnostic similarities with pathologies such as lymph node tuberculosis, cutaneous cryptococcosis and certain malignant diseases of the skeleton. The disease sometimes poses therapeutic difficulties. African histoplasmosis of the liver or spleen is rare and severe. Evolution is most often fatal S. Diadie [7].

2. CLINICAL CASE

She was a 22-year-old student, height: 1.60 m; weight: 38 kg; no known medical-surgical history. The beginning of the symptomatology goes back to 2020 marked by a stiffness, the appearance of nodules in the face, neck, chest and hands.

In front of this situation, she consulted in our center for support. The clinical examination made it possible to find nodules in the different parts mentioned above. The rest of the exam was without particularity.

Our diagnostic hypothesis was lymph node tuberculosis, the course of action was to do a cervical lymph node biopsy. The result was in favor of histoplasma duboisii adenitis. Other complementary examinations were carried out, in particular an abdominopelvic ultrasound whose result was in favor of a collected abscess of 1523 ml developed at the depends of the back cavity of the epiploons extends to the level of the pelvis, diffuse nodular heterogeneous spleen, left pleurisy of medium abundance.

We have initiated an antimycotic treatment in collaboration with the infectiologist. The therapeutic protocol was to give itraconazole then amphoterine B for 2 months then itraconazole, it still continues with itraconazole because of residual pockets.

Control abdominopelvic CT was performed, the result was in favor of heterogeneous multi-nodular hepato-splenomegaly with perihepatic, and splenic, coelio-mesenteric and para-aortico-iliac associated with perisplenic fluid effusion blade at the medial edge.

After a multidisciplinary consultation, we decided to have a splenectomy. The evolution is favorable, marked at times by outbreaks of abscesses in the buttock, breast, neck; surgical treatment was based on the flattening of abscesses and medical treatment based on itraconazole.

At the start of the treatment, she had 38 kg, she gained 70kg on 01/01/2024. The ultrasound performed on 01/01/2024 revealed a few liver nodules.

3. COMMENT AND DISCUSSION

H. duboisii occurs in warm and humid parts of Africa located between latitudes 158 North and 108 South and in Madagascar. The first African case was described in French Sudan (now Mali) in 1945 [1].

According to Landry konan [8], although they are the same species, the presentation and pathology of duboisii and capsulatum variants are variable. The capsulatum variant is endemic, not only to the United States around the Ohio and Mississippi River valleys, but worldwide, while the duboisii variant is limited to Africa. In microscopy, the yeast cell sizes of duboisii variant are larger, measuring 10-15 µm versus 2-5 µm for capsulatum variant.

3-1. Frequency

D. Ndiaye [1], found that, the frequency of infection is not known, but histoplasmin studies by intradermoreaction to tuberculin (IDR), show a prevalence of 6% in endemic areas.

Higher prevalence of up to 35% is found among rural populations such as farmers, traders and cave dwellers.

A study reported by Tchin Darré [3], on 17 cases of African histoplasmosis showed that: 11 cases were men (64.7%) and 6 cases were women (35.3%), one sex ratio (M/F) of 1.8. The annual prevalence was 1.1 cases.

The literature is not consistent on gender predilection, with some authors reporting male predominance, while others suggest female preponderance [5]. Our clinical case involved a 22-year-old girl. The average age of patients in the series of Tchin Darré [3], was 27.2 0.4 years, with extremes of 11 and 63 years.

3-2. COINFECTION

For unknown reasons, although infection with HIV and H. capsulatum var. duboisii coexist in Africa, this coinfection remains rare [3-6]. There may be an association between Duboisii histoplasmosis and certain infections (HIV, Tuberculosis, hepatitis).

We have not found an analytical study showing the responsibility of HIV in the occurrence of histoplasmosis var Duboisii, this condition occurs both in immunocompetent patients and immunocompromised patients (HIV). Our patient had no co-infection.

Tchin Darré [3], found out of the 17 cases in his study that: 3 cases were observed in patients with acquired immunodeficiency syndrome (AIDS) and one case associated with tuberculosis. In Africa, most reported cases are prior to the AIDS pandemic. Recent African literature mentions very few cases of histoplasmosis associated with HIV infection.

3-3. Clinic

D. Ndiaye [1], reported that, the manifestations are polymorphic, dominated mainly by skin lesions, lymph nodes and bone lesions in the localized forms. The most common skin manifestations are in the face and chest. These are ulcers, papules, nodules.

For our clinical case, the symptoms were marked by stiffness, the appearance of nodules in the face, neck, chest and hands.There were also visceral lesions with heterogeneous hepato-splenomegaly type multi-organnodular with perihepatic, splenic, coelio-mesenteric and para-aortico-iliac lymphadenopathy.

3-4. Different Diagnosis

According to S. Diadie [7], this disease has diagnostic similarities with pathologies such as lymph node tuberculosis, cutaneous cryptococcosis and certain malignant diseases of the skeleton. The disease sometimes poses therapeutic difficulties.

D. Ndiaye [1], showed that the lesions are ulcers, papules, hemispheric nodules (resembling molluscum contagiosum) and cold abscesses. Ganglion manifestations simulate tubercular adenitis. In our case, we thought of tuberculosis before the appearance of nodules in the face, neck, chest and hands.

3-5. Location

The duboisii variety is classically associated with skin lesions (nodules, ulcers) and osteolytic bone lesions, particularly affecting the skull, ribs and vertebrae. Histopathological examination shows granuloma with necrosis and suppuration. Disseminated disease is not uncommon and can affect all organs; however, the heart and central nervous system are unusual locations Pierre Loulergue [6].

In our patient, at first the lesions were cutaneous (nodules of the faces, neck, chest and hands). With evolution, lesions appeared in the liver, spleen and bones.

3-6. Additional Examinations

The diagnosis of certainty is ensured by an anatomo-pathological examination, however some authors have evoked biological examinations.

In a retrospective study conducted by Tchin Darré [3], the anatomo-pathological examination was the confirmation examination of African histoplasmosis by Histoplasmose duboisii.

Amechi Uchenna Katchy [5], revealed that rapid diagnosis of histoplasmosis in Africa is currently only possible with microscopy; antigenic tests and polymerase chain reaction are not available in most African countries. (Pierre Loulergue [6], showed that laboratory diagnosis is performed by direct examination and culture. Tissue or body fluid cultures are performed on Sabouraud dextrose agar, incubated at 25°C; incubation can be extended up to six weeks. The success rate depends on the extent of the infection, the source of the sample, and the rapid processing of the sample.

The histological examination carried out in our clinical case made it possible to highlight histoplasmosis capsulatum var Duboisii.

3-7. Processing

Treatment is based on antimycotics, it is based on the experience of health professionals, several schemes exist, however the toxicity of Amphotericin B makes this product less used for long-term treatment.

The treatment is medico-surgical Surgical treatment consists of flattening in case of abscesses and necrosectomy in front of devitalized tissues.

Pierre loulerg [6], in his study, started with itraconazole (400 mg/d), but was replaced by amphotericin B (1 mg/kg/d) after 3 weeks because local symptoms persisted. The total dose of amphotericin B was 1200 mg. Itraconazole (400 mg/d) was then restarted for 1 year. (D.Ndiaye) [1], suggested that amphotericin B, despite its toxicity, remains the reference molecule. Itraconazole represents an alternative in localized forms. In HIV subjects, the treatment must include an attack phase allowing to reach a dose of 2 to 3 g of amphotericin B. It must be followed by an extended maintenance phase on average for a year. The relay is usually taken by azoles, including itraconazole (400 mg/d), ketoconazole (600 mg) or voriconazole. Fluconazole due to 400 mg would also be effective.

In the (Olivier Pacoud) [9], study, they administered intravenous liposomal amphotericin B (4mg/kg/day) and oral itraconazole (400mg/day), followed by itraconazole (400mg/day). After more than two years, the patient made an almost complete neurological recovery, with only a slight alteration of the residual memory in our patient, the medical treatment was based on.

The surgical treatment consisted in making a flattening of the microa-bcès, a laparotomy for peritonitis for abscesses in the back cavity of the epiploons at the expense of the spleen, secondarily a splenectomy was performed.

Table 1: according to authors' therapeutic protocol

Authors	Attack treatment molecule	dosage	Treatment duration	Maintenance treatment molecule	dosage	Treatment duration	Location of lesions	Results
Boukassa L	Itraconazole	800mg /d	12 Weeks	Itraco	800mg/d	12 weeks	occipital	Cured
Landry konan	Amphotericine B	150mg/d	4 Weeks	Itraco	200mg/d	6 month	intracranial	Cured
D.Ndiaye	Amphotericine B	2-3g /d	-	Itraco	400mg/d	-	Disseminated papulonodular skin lesions	deceaced
S. Diadie	Amphotericine B	0,5mg/kg/d Then 1mg/kg/d	4 month	Itraco	400mg/d	6 weeks	Papulonodular lesions, Disseminated cutaneous ulcero-buds Hepatomegaly Splenomegaly Bone damage	deceaced
Amechi Uchenna Katchy	Itraconazole	200mg/d	-	Itraco	200 mg/d	3 years	left femur	Cured
(Olivier Pacoud)	Amphotericine B	4mg/kg/d	-	Itraco	400mg/d	2 years	Cerebral localization	Cured
M.D. Mignogna	Fluconazole 200mg/d	200mg/d	1 month	Fluconazole	100mg/d 200mg	1 month 1 month	Right antero-posterior ulceration of tongue	Cured
Notre cas	Itraconazole : Then Amphotericine B	1gelulue 2times/d 4mg/kg/d	1 month 1 month	Itraconazole : 100mg	1gelule 2 times /d		Skin and bone lesions are healed Liver nodules persist	being processed

4. CONCLUSION

Histoplasmosis with Hystoplasma Duboisii is an underrated pathology. In its skin manifestations (abscesses, nodules) and in its bone manifestations, it can be confused with tuberculosis. Pathological examination confirms the diagnosis.

It is a long-term treatment, the prognosis depends on the early diagnosis.

5. ICONOGRAPHY

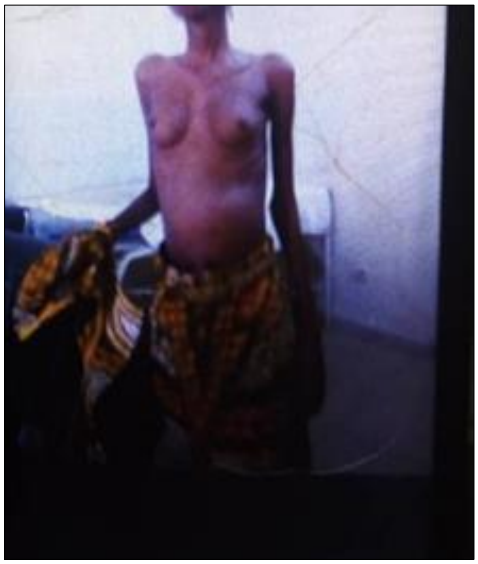

Figure 1: 38kg
Before treatment

Figure 2: 70kg
After treatment

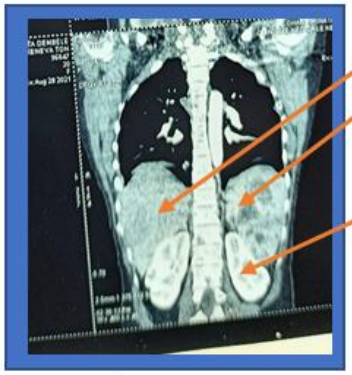

Figure 3

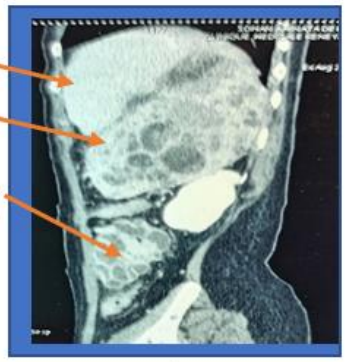

Figure 4

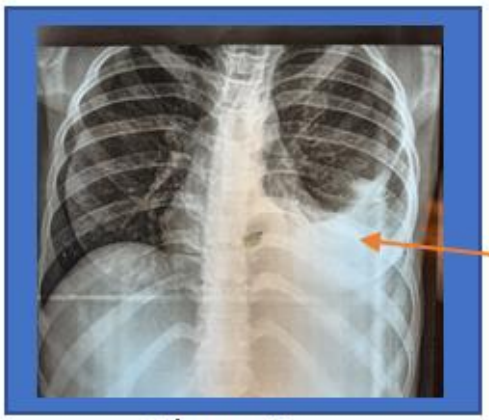

Figure 5

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