Scientific Journal of
Clinical Research in Dermatology

Case Report

Primary *Cutaneous Cryptococcosis*: about a Diffuse Case in a Subject not Infected by HIV in West Africa - ∂

Andonaba JB[1]*, Konate I[1], Ouedraogo AS[2], Sangare I[1], Bamba S[1], Diallo B[1], Barro/Traore F[2], Niamba P[2] and Traore A[2]

[1]*Head of Department Dermatology, Bobo-Dioulasso Nazi Boni University, Burkina Faso*
[2]*Joseph Ki-Zerbo University of Ouagadougou, Burkina Faso*

***Address for Correspondence:** Andonaba Jean Baptiste, Head of Dermatology Department, Bobo-Dioulasso Nazi Boni University, Burkina Faso, Tel: +226 70404018; E-Mail: jb_andonaba@yahoo.fr

Submitted: 07 July 2017; **Approved:** 04 August 2017; **Published:** 04 August 2017

Citation this article: Andonaba JB, Konate I, Ouedraogo AS, Sangare I, Bamba S, et al. Primary Cutaneous Cryptococcosis: about a Diffuse Case in a Subject not Infected by HIV in West Africa. Sci J Clin Res Dermatol. 2017;2(1): 028-031.

Summary

The Primary Cutaneous Cryptococcosis (PCC) is a fungal infection due to the *Cryptococcus neoformans* (*C. neoformans)*. It occurs after a transcutaneous inoculation most often among the subject immunocompromized. We report a case of profuse PCC at a young subject, not infected by HIV in West Africa. The observation has concerned a young farmer of 21 years who has presented umbilicated and necrotic papules, festers by location and diffuse, associated with nodular and tumoral lesions, painless and scattered whose the puncture brought back of frank pus. India ink staining showed yeasts compatible with *Cryptococcus* spp. The histopathology showed of yeasts to Gromori Grocott and the absence of tuberculosis. The patient received fluconazole for his treatment. The observance has not been good and the patient had recourse to the traditional treatments; the death occurred because of hepatitis with ascitic fluid. Better observance of antifungal treatment is able to improve the vital prognosis.

Keywords: *Cutaneous cryptococcosis*; Immunocompetent; Treatment; Burkina Faso

INTRODUCTION

The Cutaneous Cryptococcosis (CC) is a fungal infection due to the saprophytic yeasts of the genus *Cryptococcus*. These yeasts may be found in the ground, bird droppings and some trees like eucalyptus [1]. The CC represents 10% of the whole of the cryptococcosis [2]. The achievement of the skin is done by direct transcutaneous inoculation or secondarily after inoculation of the lung. It usually occurs in the subject with an iatrogenic immune deficit, cancerous, hematology and congenital immune deficit, by transplantation or infectious origin with in head the infection by HIV. The typical clinical manifestation is the umbilicated papules. One can also observe lesions type papules and pustules like in acne, ulcerated nodules, abscesses, cellulitis or erythematous plate [3,4]. Recently, the Primary Cutaneous Cryptococcosis (PCC), which occurs after transcutaneous inoculation, has been individualized as a fully-fledged entity [5]. It is described in the immunocompromised and also among the immunocompetent. The shape of the immunocompetent is rarely described in Africa. It is usually localized and responds well to antifungal [3]. We report a case of PCC with deadly evolution at a young subject, not infected by HIV in West Africa.

OBSERVATION

Mr. KB 21 years, Burkinabe, expatriate farmer in the ivorian plantations, without particular history is received in December 2014 at the dermatology service of the teaching hospital, Centre hospitalier universitaire Souro Sanou (CHU-SS) in Bobo-Dioulasso (Burkina Faso) for papular lesions, diffuse nodular and tumoral lesions evolving since 6 months. The symptomatology was secondary to a bite of insect not identified. She started two weeks after the bite by a nodule located first in point of monitoring bite then an extension to the whole of the body. This eruption was accompanied by headache and a hyperthermia not encrypted which have motivated multiple modern and traditional treatments without success. The general review had noted a good general condition, a weight = 60 kg, temperature = 37°, blood pressure = 110/ 80 mm, pulse = 80 beat / Mn and respiratory frequency = 18 cycles/ mn.

The dermatological review had noted umbilicated papules between 5 and 10 mm diameter necrotic, festes by location and diffuse lesions. It also noted nodular, tumoral and rounded lesions, variable in size from 20 mm to more than 50 mm diameter, mobile and painless on palpation, diffuse on the body with a maximum on the trunk (Figure 1). The puncture of a nodule brings back of frank pus. The review of the palms, plants and mucous membranes were without notable characteristic. The diagnosis of cryptococcosis had been evoked without excluding tuberculosis or skin histoplasmosis.

The parasitological examination of the dermal juice after colouring with the Indian Ink had shown the presence of *Cryptococcus* spp (Figure 1a). The identification after culture had not been carried out because after first negative fungal culture the patient did not honor the second appointment with the mycologist for a second culture. The pus was sterile to the bacteriological research. Histopathological examination of a umbilicated papule and a fragment of nodule had noted an inflammatory and granulomatous reaction consists mainly of giant cells type Muller. Into the granulomatous reaction was many small yeasts often phagocytosed by macrophages with many nucleus, visible to the (Figure 2b) and the Gromori Grocott (Figure 2c and 2d). There was no tuberculoid granuloma and no necrosis. The retroviral serology was negative. Serologies of the viruses of hepatitises B and C were not carried out. Pulmonary radiography was normal. The patient has been treated by Fluconazole 300 mg/ j. It has been lost sight of one week after its implementation under treatment for the benefit of multiple traditional treatments in his village. After approximately 6 months without medical follow-up, it was readmitted to our hospital (CHUSS) with acute hepatitis and ascitic fluid which led to the death in hospitalization.

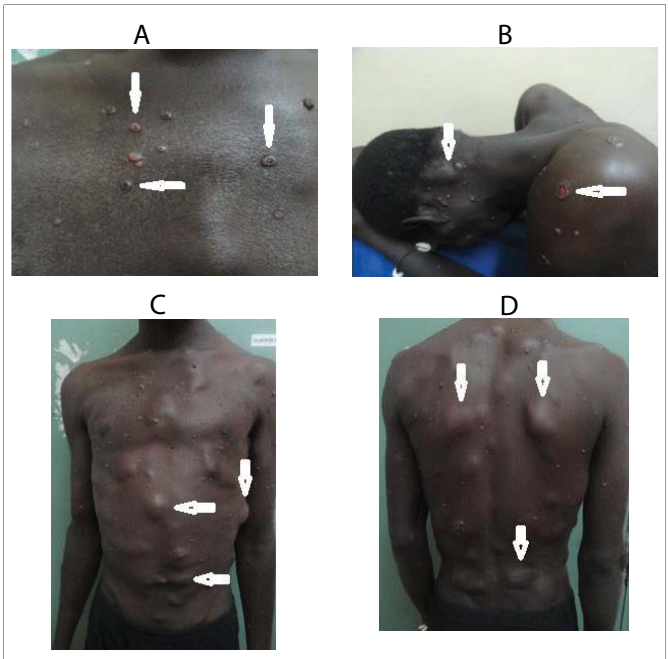

Figure 1: A: Papules ombiliquees. **B:** Severe papule and nodule. **C,D:** polymorphic lesions diffuse (papules and nodules tumors).

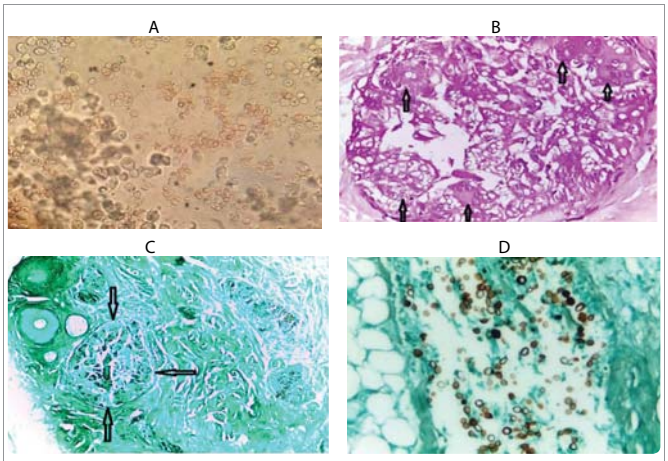

Figure 2: **Indian ink Technique (a) the HE (b) and the Gromori-Grocott (c and d).**

DISCUSSION

We present through this observation a case of diffuse PCC at a young subject, not infected by the HIV in our African Western context. The PCC has been recognized as a fully-fledged entity [5]. It is the prerogative of the different forms of immunosuppression. Indeed, a cellular immune defect, such as HIV infection, or severe lymphocytopenia independent of HIV infection can be discovered in this setting. The shape of the immunocompetent is rare. The cases described in the literature are essentially American, European and Asian [3,4,6]. In Africa, the literature is poor and the cases described are in relation with HIV infection [7]. Our patient was negative for HIV infection. We have not found other obvious causes of immunosuppression in our investigations. Our patient presented polymorphic lesions associating umbilicated papules or not, festes or necrotic, nodules and swellings in the form of cold abscesses. These lesions were diffuse on the skin. Usually, the lesions of the CC of the immunocompetent were monomorphic localized and sits on the ends [3,6]. We have not recovered from obvious cause for this diffuse character. It is not excluded that the previous treatments were immunosuppressive more especially as it was about self medications non identifiable and not described clearly by the patient and the entourage. This form although profuse is compatible with a primitive cutaneous attack. In effect, the symptoms began in the site of insect bites identified two weeks before the symptomatology. This site could correspond to the point of inoculation. The *Cryptococcus neoformans* is found in the ground, the bird droppings and some trees [1,2]. The literature describes *Cryptococcus* tank in insects; a Brazilian study consider that the cockroaches of the species *Periplaneta americana* are a potential vector for yeasts [8]. Moreover, our patient farmer lives in rural areas; the rural environment and the minor local traumas are also described as at the risk in the transmission of the cryptococcosis [3]. Finally, the patient had no pulmonary sign as well to the clinic and on the X-ray photograh. The confirmation of the cryptococcosis is based on the direct examination with the Indian Ink Technique, the histology and culture that enables the identification of the species [2]. We have not been able to achieve the culture for the identification of the species because the first fungal culture has been negative. In a study of a Vietnamese male patient, Nguyen, et al. [9] have observed a first fungal negative culture and it is only the second culture which has been positive. Our patient has been reconvened for a second culture but it has not honored its appointment because he has consulted in traditional medicine which excluded any other medicine; indeed the patient was illiterate without health insurance and has always lived in rural areas. Nevertheless, the test with the Indian Ink Technique had resulted in the diagnosis of skin cryptococcosis. The histology permitted to confirm the fungal origin and rejected a molluscum contagiosum and possible associated cutaneous tuberculosis. The African histoplasmosis due to *Histoplasma duboisii* debatable in this patient [1,10,11] in our context in West Africa, has been ruled out by the absence of mucosal lesion and the test with the Indian Ink Technique.

The treatment of the CC does appeal to antifungal. Among the immunocompetent, the outcome is generally favorable. The literature fact state of eight cases of healing on ten patients treated with fluconazole [3]. Our patient has been treated by 300 mg of fluconazole by day. He died because of hepatitis and ascitis after a long period without medical follow-up. The literature described the forms associated with viral hepatitis B or C among the immunocompetent subject. Unfortunately in our patient, these conditions have not been able to be sought biologically by the fact of the rupture of the therapeutic contract. The course therapeutic treatment of patient was marked by multiple self-medications as well as a poor compliance of the antifungal treatment for the benefit of the traditional therapeutic. The safety of these treatments is not proven; however they are a possible cause of death.

CONCLUSION

Among parameters that seem to differentiate PCC from secondary cryptococcal infection is the immune status of the host. However, the diagnosis of PCC should prompt analysis of the host's immune status. Although histopathological examination can contribute to the diagnosis, local inflammation does not distinguish between primary and secondary lesions. It is necessary to evoke a CC among patients with umbilicated papules even without context of infection by the HIV. Better observance of antifungal treatment is able to improve the vital prognosis.

REFERENCES

1. Morand JJ. Mucocutaneous manifestations of deep and / or tropical mycoses (Excluding candidoses). EMC Dermatologie. 2012; 7:1-11.

2. French Association of Parasitology and Mycology Teachers. Cryptococcose. Francophone Virtual Medical University. 2014; 1-7. https://goo.gl/gE1hdW

3. Du L, Yang Y, Gu J, Chen J, Liao W and Zhu Y. Systemic review of published reports on primary cutaneous cryptococcosis in immunocompetent patients. Mycopathologia. 2015; 180: 19-25. https://goo.gl/Lffe7R

4. Hyde K, Warren D and Gavino ACP. Primary cutaneous cryptococcal infection with subsequent erythema nodosum in a 10-year-old immunocompetent girl. JAAD Case Rep. 2016; 2: 494-496. https://goo.gl/W5VWpg

5. Arjona-Aguilera C, Jimenez-Gallo D, Collantes-Rodriguez C and Linares-Barrios M. Primary Cutaneous Cryptococcosis: A New Case of the Rare Entity. Open Forum Infectious Diseases. 2017; 4. https://goo.gl/Sm8tUq

6. Neuville S, Dromer F, Morin O, Dupont B, Ronin O, Lortholary O and et al. Primary cutaneous cryptococcosis: a distinct clinical entity. Clin Infect Dis. 2003; 36: 337-47. https://goo.gl/ga9Wii

7. Amaral DM, Rocha RC, Carneiro LE, Vasconcelos DM and Abreu MA. Disseminated cryptococcosis manifested as a single tumor in an immunocompetent patient, similar to the cutaneous primary forms. An Bras Dermatol. 2016; 91: 29-31. https://goo.gl/juNsrr

8. Pablo Waldeck, Goncalves de Souza, Daniel Paiva Barros de Abreu and Francisco de Assis Baroni. Cryptococcus neoformans Isolated from Periplaneta americana. Rev patol trop. 2011. 40: 239-246. https://goo.gl/aNcX5K

9. Huong NTC, Altibi AMA, Hoa NM, Tuan LA, Salman S, Morsy S and et al. Progressive cutaneous Cryptococcosis complicated with meningitis in a myasthenia gravis patient on long-term immunosuppressive therapy - a case report. BMC Infect Dis. 2017; 17: 311. https://goo.gl/RgptFC

10. Ehui E, Eholie SP, Kakou A, Gbery I, Diomande JM, Abdou-Bryn KD and et al. Cutaneous cryptococcosis in an HIV-infected subject. J Mycol Med. 2000; 10: 97-9.

11. Zida A, Niamba P, Barro Traore F, Korsaga Some N, Tapsoba P, Briegel J, et al. Disseminated due to Histoplasmosis casued by Histoplasma capsulatum var. Duboisii in a non-HIV patient in Burkina Faso: Case report. J Mycol Med. 2015; 25: 159-62. https://goo.gl/rxW7Hb