

***Candida Parapsilosis* Meningitis in a Patient with AIDS: Report of a Case and Review of the Literature**

Yassine Merad^{1,2*}, Belkacemi Malika¹, Zoubir Belmokhtar³, Amine Benin⁴, Narjess Tabet-Derraz⁵ and Haiet Adjmi-Hamoudi⁶

¹Central laboratory, “Hassani Abdelkader” Hospital, Sidi-bel-Abbes, Djillali Liabes University, Algeria

²Laboratory of Environmental Information Synthesis, Djillali Liabes University, Sidi-bel-Abbes, Algeria

³Department of Environmental Sciences, Djillali Liabes University, Sidi-bel-Abbes, Algeria

⁴Department of Biological Sciences, Djillali Liabes University, Sidi-bel-Abbes, Algeria

⁵Department of Infectious Diseases, “Hassani Abdelkader” Hospital, Sidi-bel-Abbes, Algeria

⁶ Department of Medicine, University of Algiera, Algeria

***Corresponding author:** Yassine Merad, Central laboratory, “Hassani Abdelkader” Hospital, Sidi-bel-Abbes, Djillali Liabes University, Algeria, Tel: 0213558202033; E-mail: yassinemerad8@gmail.com

Abstract

***Candida parapsilosis* is a very rare cause of meningitis. Though several cases have now been reported in neonates and children, only few have been described in adult HIV patients. This case report is justified by the rarity of this diagnosis in HIV patients seen in our institution.**

The results in Sabouraud’s culture and biochemical test (Auxacolor[®]) were compatible with *Candida parapsilosis*.

The patient has been started on fluconazole, but meningitis progressed to death, showing the gravity of such an opportunistic infection.

We emphasize, that rapid monitoring tests and treatment based on drug sensitivity test are required.

Keywords: *Candida parapsilosis*; *Meningitis*, *Invasive mycosis*; *HIV*

Received Date: December 03, 2019; **Accepted Date:** December 10, 2019; **Published Date:** December 17, 2019

Introduction

Candida species represent the fourth most common cause of nosocomial bloodstream infections [1], as well as the single most frequent cause of opportunistic fungal infections worldwide [2].

Invasive fungal diseases are increasingly observed among critically ill patients and are associated with a high index of

Citation: Yassine Merad, *Candida Parapsilosis* Meningitis in a Patient with AIDS: Report of a Case and Review of the Literature. J Clin Cases Rep 3(4): 152-156.

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morbidity and mortality [3]. *Candida* infections of the CNS are uncommon and represent the manifestation of disseminated infection due to *Candida* species especially in immune compromised patients [3,4], *Candida meningitis* is related to a poor outcome and its risk factors are similar to those for candidemia [5].

Candida parapsilosis is a very rare cause of meningitis. Though several cases have now been reported in neonates and children, only few have been described in adult HIV patients. The adherence capacity of *Candida* and its ability to form biofilms may be important fungal virulence factors to all *Candida* species and especially for *Candida parapsilosis* [6,7].

Case Report

We report on a 35-year-old male living in rural area that was admitted in our institution due to headache and recurrent high fever status (temperature fluctuated between 38.5°C and up to 40°C); associated with oropharyngeal candidiasis as the first manifestation of AIDS, accompanied with non projectile vomiting and occasionally with history of migraine, the patient's vital signs were within the normal limits.

On admission, imaging studies showed no evidence of fungal origin; the first diagnostic hypotheses were *cryptococcal meningitis* or tuberculosis of the central nervous system because of the prevalence of these diseases.

Positive serology for HIV increased the clinical suspicion of neural cryptococcosis. However, direct examination of the CSF, using China ink, was negative for the presence of fungal structures.

The CSF tests showed: glucose 2.50 mmol/L. The CSF cytology showed that lymphocytes increased mainly.

The first, CSF cultures on Sabouraud medium showed growth of creamy and smooth white colonies. Under microscopic examination, samples of colonies were characterized as oval blastoconidia, without capsules. Microscopic examination of the 3 daily cerebrospinal fluid (CSF) cultures still showed consistently grew of creamy and smooth white yeast colonies, and confirmation of *Candida parapsilosis* was based on filamentation test, chlamydoconidia production and biochemical test (Auxacolor®).

On day 4, the treatment was initiated with fluconazole 400 mg/day intravenously as soon as diagnosis was clear, level of consciousness continued to decline. Unfortunately, the patient discharged from the hospital on the 6 day since administration and died while receiving treatment (Figure 1).

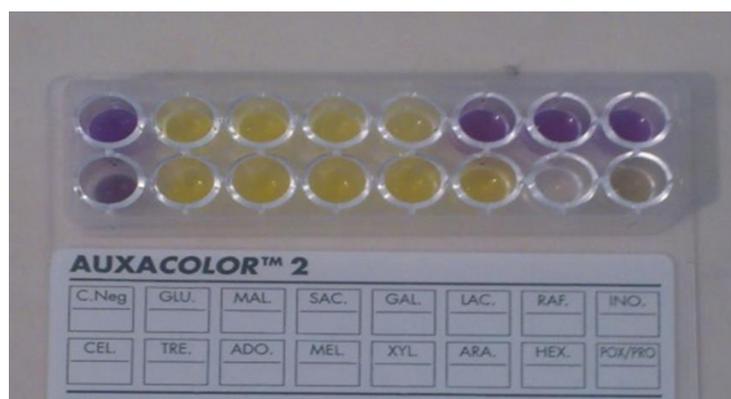


Figure 1: Biochemical test (Auxacolor®) on CSF culture, showing *Candida parapsilosis*.

Discussion

Central nervous system (CNS) *Candida* infections in adults can occur as a manifestation of disseminated candidiasis, as a complication of a neurosurgical procedure (especially CSF shunt placement) or as isolated chronic infection [3,8,9].

Candida albicans was the most common pathogen of candidiasis in the past, the proportion of non albicans infection has tended to rise recently [10], and *Candida meningitis* is more common in neonates and children than in adults [11] since the child has an undeveloped immune system [9].

Meningitis is the most common clinical presentation, but multiple or single brain abscesses and epidural abscess have been reported [12].

Among fungi, *Candida parapsilosis* is a relatively rare cause of meningitis [9] and has become an increasingly important cause of nosocomial infections, particularly in the intensive care unit setting [11]. The opportunistic nature of the pathogen allows a wide possibility of clinical manifestations, with increasing number of atypical cases [5]. Fungal infections of the CNS are a diagnostic challenge, due to the difficulty in confirming the diagnosis in many situations [13].

Other causes of chronic infectious meningitis are much more common than candidiasis. *Mycobacterium tuberculosis* is a frequent infectious cause of chronic meningitis in immunocompetent patients, but in immunocompromised individuals, especially during the AIDS era, *Cryptococcus* species have been the most frequent cause [5], non-infectious diseases (neoplasia, Behcet's disease, sarcoidosis, lupus erythematosus) can also cause chronic meningitis. In any of the causes, signs and symptoms of meningoencephalitis are present, such as fever, headache, lethargy, confusion, nausea, and vomiting and neck stiffness, usually with more than 2 weeks of evolution [14].

Although meningitis due to *Candida parapsilosis* has been previously described in HIV infection [15], *Candida albicans* is the most frequent etiological agent with a few reports of other species as *Candida parapsilosis* and *Candida glabrata* [5,12].

CSF findings were consistent with those reported in the literature [5]. *Candida* includes yeast type and *pseudohyphae* type and produces blastoconidia. In this case, we can see blastoconidia only with India ink staining in. Brain biopsy hadn't been done. CSF is frequently abnormal, it generally reveals a mild lymphocytic or polymorphonuclear pleocytosis, hyperproteinuria and low glucose levels [3,5,16,17], these findings are similar to cryptococcal or *Mycobacterium tuberculosis* meningitis, the two most frequent opportunistic pathogens that cause meningoencephalitis in AIDS patients [3,18].

Meningitis caused by non-albicans *Candida* is rare in the clinic and does not have specific manifestations, which make the misdiagnosis occur sometimes, especially in the early stage of the disease [10].

There is currently no consensus concerning the appropriate treatment of invasive *Candida parapsilosis* diseases [9] due to the limited number of reported cases. *Candida parapsilosis* meningitis hospital course is complicated and requires nearly 3 month of in-patient care [9]. Therapy should be continued until all signs and symptoms, CSF abnormalities and radiological findings have been resolved [12].

Rapid monitoring tests are required even with the use of an adequate therapeutic regimen, as the drug of choice for candidiasis of the central nervous system is also amphotericin B [5].

This case reminds us that candidiasis should be considered, if we found patients had unexplained fever responded poorly to antibiotics, thrush, esophagitis, vaginitis, atypical lung infiltrates, unexplained liver dysfunction, mental abnormality, endophthalmitis, dry cough, rash, and tender muscle [19].

Conclusion

This case emphasize the need for suspicion of *Candida parapsilosis* as a cause of meningitis in HIV patients, its diagnostic requires vigilance from clinician given its no specific symptoms The culture remains necessary to confirm the diagnosis of candida meningoencephalitis, not only the routine CSF cell counts and protein tests. However, rapid monitoring tests are required. If the diagnosis is established, patients should receive antifungal treatment based on drug sensitivity test as early as possible.

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