PRIMARY CUTANEOUS ASPERGILLOSIS WITH SECONDARY PULMONARY DISSEMINATION

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INTRODUCTION

Cutaneous aspergillosis is a rare clinical entity, essentially in its primitive form. In addition to its local destructive effect, it may be an entry point for disseminated aspergillosis in immunocompromised patients. This entity is often associated with underlying skin lesions such as traumatic or surgical wounds, burns, and catheter access points [1-2]. We report a case of primary cutaneous aspergillosis (PCA) with secondary pulmonary localization in a patient with acute myeloid leukemia.

CASE PRESENTATION

Our patient is 13 years old followed in the clinical hematology department for acute myelomonocytic leukemia (AML 4) diagnosed in March 2020. After receiving 2 courses of chemotherapy (Aracytine-Daunorubicin) in March and July 2020, our patient was hospitalized in October 2020 for a 3rd cure. On admission, the patient was afebrile, eupneic without adenopathy or splenomegaly. The biological results were: Hb: 12.3 g/dL, WBC: 4700/uL (53.2% neutrophils, 38.3% lymphocytes), Platelets: 157,000/µL, the results of the renal and hepatic biological tests were correct. His 3rd course of chemotherapy was complicated by febrile aplasia (39°C, Hb: 9.3g/dL, WBC: 200/Ul, Neutrophils: 20%, Platelets: 17,000/µL, CRP: 206) with appearance at 7 days post-chemotherapy of papulonodular lesions of the two forearms near the sites of intravenous administration with an unfavorable evolution and transformation into ulceronecrotic lesions (Fig 1) despite broad-spectrum antibiotic therapy (Imipenem Teicoplanin – Polymyxin E). A swab of the skin lesions was performed. direct examination showed hyaline mycelial filaments (Figure.2 A and B). After 72 hours, a culture on Sabouraud agar at 30°C initially isolated white then black colonies giving a “pepper and salt appearance” (Figure.2 C). Microscopic examination of the colonies showed *Aspergillus niger* (Figure.2). Aspergillus antigenemia (Platelia™ Aspergillus Ag®) was positive with an index of 3.83. The patient was put on amphotericin B. Skin biopsy was not possible due to profound thrombocytopenia. Faced with the appearance of a cough, a thoracic CT-scan performed in search of secondary localizations revealed a pulmonary nodule excavated from the right latero-basal segment. A mycological examination of the sputum was also positive with a culture which revealed *Aspergillus niger*. The clinical evolution under voriconazole was marked by the achievement of apyrexia, the improvement of the cutaneous lesions, the respiratory signs as well as a decrease in the aspergillus antigenaemia (index of 1.01) and the exit of the aplasia.

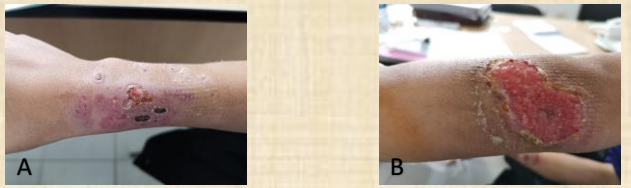

Figure 1: Cutaneous lesions at venepuncture area on the right wrist (A) and left arm (B)

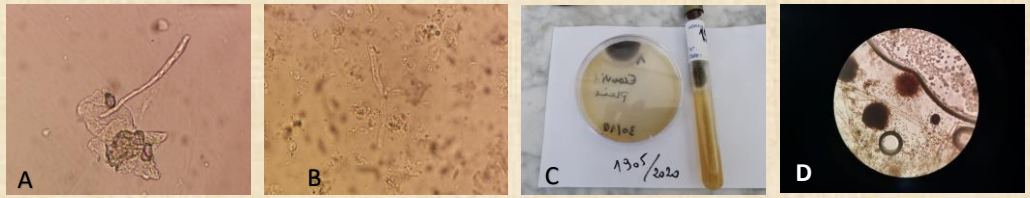

Figure 2: A and **B**. Hyaline mycelial filaments **C**. Colonies of Aspergillus niger after 48h of incubation on Sabouraud agar **D**. Microscopic examination of *Aspergillus niger* colonies

DISCUSSION

Immunocompromised patients are most susceptible to develop invasive aspergillosis, especially long-term neutropenics [2-3]. Due to continuous exposure to *Aspergillus* spores from the external environment, cutaneous aspergillosis may be one of the primary but not the most frequent localizations. Cutaneous involvement in invasive aspergillosis is rare, as reported by Bernardeschi et al. (1%) and by D'Antonio et al. (4%) [4-5]. In both cases, 1/3 of cutaneous aspergillosis was primary. PCA develops when skin integrity is broken by direct inoculation into catheter insertion sites as described in our case. A retrospective study of cutaneous fungal infections in immunocompromised children showed 44% of these cutaneous fungal infections are due to *Aspergillus sp*. *Aspergillus flavus* and *Aspergillus niger* were the most isolated species [6,7-8]. ACP is described in patients with underlying hematological malignancies, most commonly leukemias and lymphomas. Adusumilli et al reported that 0.27% of leukemia patients develop cutaneous aspergillosis [9]. In conclusion, our observation shows the interest of early diagnosis of aspergillosis in neutropenic patients. Collaboration between the hematology department and the parasitology-mycology laboratory is of great importance in order to ensure adequate and rapid management.

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