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# Invasive Fusariosis Revealed by Necrotic Cutaneous Lesions in a Child with Acute Leukemia: A Case Report

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**Abstract** | **Case Report**

Fusariosis is a rare but severe opportunistic fungal infection, mainly affecting immunocompromised patients. We report the case of an 8-year-old girl with acute leukemia who developed disseminated fusariosis presenting with painful hemorrhagic vesiculobullous and necrotic skin lesions associated with fever. Blood cultures and skin biopsy confirmed infection with *Fusarium* species. The patient showed significant clinical improvement after treatment with intravenous amphotericin B. This case highlights the importance of early recognition of cutaneous manifestations as a key diagnostic clue in invasive fusariosis.

**Keywords:** Fusariosis, Acute leukemia, Pediatric, Cutaneous manifestations, Amphotericin B, Opportunistic infection.



## INTRODUCTION

Fusariosis is an opportunistic infection caused by filamentous fungi of the genus *Fusarium*, widely distributed in soil, air, and water [1,7]. In immunocompetent individuals, *Fusarium* species usually cause localized infections such as keratitis or onychomycosis [1,7]. In contrast, invasive and disseminated forms occur predominantly in immunocompromised patients, particularly those with hematologic malignancies, prolonged neutropenia, or undergoing chemotherapy [1,4]. Disseminated fusariosis is associated with high mortality and often presents with characteristic cutaneous lesions that may serve as an early diagnostic indicator [1,8]. The aim of this article is to report a rare case of pediatric invasive fusariosis revealed by characteristic necrotic cutaneous lesions in a child with acute leukemia, and to highlight the diagnostic value of early dermatologic assessment in improving patient outcomes.

## CASE PRESENTATION

An 8-year-old girl from Essaouira, followed for acute leukemia at the Hematology Department of Mohammed VI University Hospital, presented with a one-month history of painful vesiculobullous skin lesions with hemorrhagic content. The lesions were partially umbilicated and progressively evolved toward necrosis, involving the trunk, back, and limbs. The clinical picture was associated with high-grade fever reaching 39.5°C. No mucosal involvement was observed, and Nikolsky's sign was negative. (Figure 1 and 2)

Laboratory investigations revealed leukocytosis (25,000/mm³), hemoglobin level of 9 g/dL, platelet count of 100,000/mm³, and circulating blasts at 15%. Renal function and electrolyte levels were within acceptable limits. Serologic tests for HIV, hepatitis B and C, and syphilis were negative. Chest radiography showed no abnormalities. Same for the abdominal ultrasound and ophthalmologic evaluation. Fungal blood cultures grew *Fusarium* species. A skin biopsy performed on three fragments demonstrated septate hyaline fungal filaments with characteristic conidia, associated with a dense polymorphous inflammatory infiltrate rich in neutrophils and eosinophils, confirming the diagnosis of invasive fusariosis. The patient was treated with intravenous amphotericin B, resulting in marked clinical improvement.

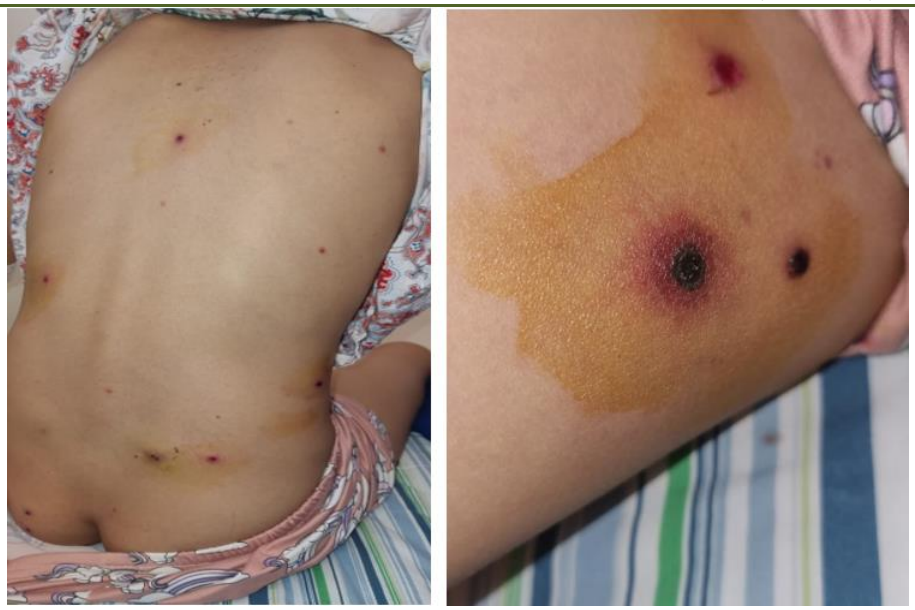

**Figure 1: Vesicles/bullae with hemorrhagic contents, umbilicated in places, with necrotic evolution**

**Negative Nikolsky test**

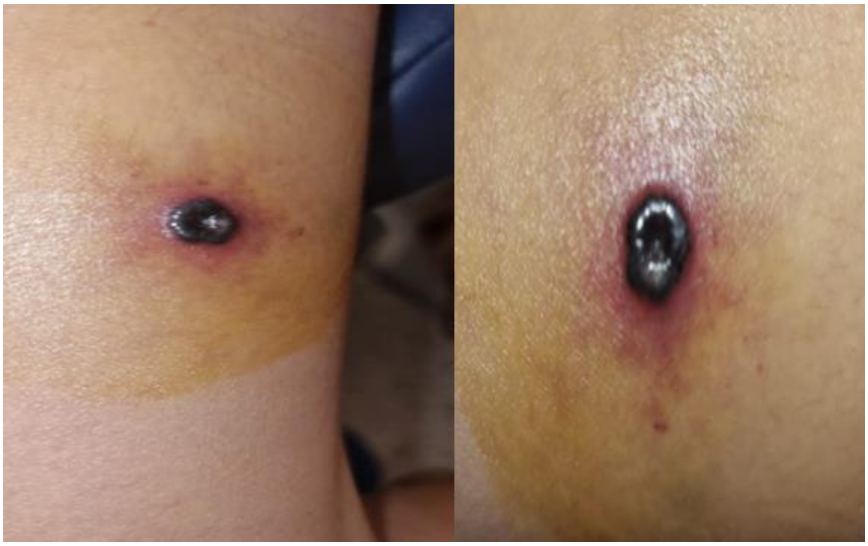

**Figure 2: Umbilicated appearance**

## DISCUSSION

Fusariosis is a rare but severe opportunistic fungal infection, occurring mainly in immunocompromised patients, particularly those with hematologic malignancies [1,4]. Invasive and disseminated forms remain uncommon in children, making our case of pediatric fusariosis clinically noteworthy [4].

A distinctive feature of fusariosis is its high rate of bloodstream invasion compared with other hyaline molds, with fungal blood cultures positive in up to 60% of cases [1]. This high rate of bloodstream invasion reflects the pathogen's ability to sporulate in tissues and disseminate hematogenously [1,7]. In our patient, the positivity of fungal blood cultures was a key diagnostic element, allowing early etiological identification and prompt initiation of targeted antifungal therapy.

Cutaneous involvement is reported in approximately 60–80% of disseminated fusariosis cases and frequently constitutes the earliest clinical manifestation of systemic infection [1,8]. The skin lesions are often polymorphic, including erythematous macules, papules, nodules, vesiculobullous eruptions, and characteristic painful necrotic or hemorrhagic lesions with central eschar formation [1,8]. These lesions result from vascular invasion and subsequent thrombosis leading to tissue ischemia and necrosis [7,8]. In neutropenic patients, the rapid progression and multiplicity of lesions should immediately raise suspicion of an invasive fungal infection [1,3]. In our case, the early appearance of necrotic and hemorrhagic

vesiculobullous lesions was a crucial clinical clue pointing toward disseminated fusariosis.

Histopathology plays a key role in diagnosis but may be challenging due to morphological similarities with other filamentous fungi such as *Aspergillus* [3,7]. Therefore, fungal culture remains essential for definitive identification [3].

Therapeutic management is complex because of intrinsic resistance to several antifungal agents [5,7]. Current treatment relies mainly on liposomal amphotericin B or voriconazole [2,3]. However, prognosis largely depends on recovery from neutropenia and control of the underlying disease, as persistent immunosuppression is associated with high mortality [1,2].

The interest of our case lies in the rarity of invasive fusariosis in the pediatric population and in the diagnostic value of early cutaneous manifestations, highlighting the central role of dermatological evaluation in improving patient outcomes.

## CONCLUSION

This case illustrates the aggressive nature of invasive fusariosis in pediatric patients with hematologic malignancies [1,4]. Early recognition of characteristic necrotic skin lesions, combined with mycological and histopathological confirmation, is essential for timely diagnosis and treatment [1,3,8]. Dermatologists play a pivotal role in identifying early cutaneous signs, which may significantly improve patient outcomes [8].

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