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Fatal invasive aspergillosis in a child with Chronic Granulomatous disease; a case report
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In this article, we have reported a case of invasive aspergillosis in an 8-year-old boy with chronic granulomatous disease, who presented with pleural effusion and pneumonia, cerebral venous sinus thrombosis, and unusual skin lesions (Fig. 1) caused by Aspergillus fumigatus (Fig. 2). The patient received recombinant human interferon-γ subcutaneously (1-2 doses in even days) and antimicrobial prophylaxis, including itraconazole (100 mg/d), cotrimoxazole (1 mg trimethoprim/kg/day weight), and ceftriaxone (5 times a week, 200 mg), during hospitalization.

Unfortunately, he developed a central nervous system abscess which perforated the wall of a ventricle and caused meningitis. The treatment was immediately started according to the direct examination results. Due to the MRI findings suggestive of brain abscesses and brain edema, empirical amphotericin B and voriconazole were started. The in vitro antifungal susceptibility test (AFST) of A. fumigatus strain utilizing the microbroth dilution method of the Clinical and Laboratory Standards Institute (CLSI) M38-A2 protocol for five antifungal agents including voriconazole, itraconazole, fluconazole, caspofungin, and amphotericin B, the minimum inhibitory concentration (MIC) of antifungal agents were 0.25, 1, 16, 0.125, and 4 mg/L, respectively. Voriconazole and caspofungin were shown to be the most potent antifungal drugs against this A. fumigatus strain. On the other hand, the IDSA protocols recommend voriconazole as the initial therapy of invasive aspergillosis in most patients. So, in response to the results of antifungal susceptibility testing, treatment was switched to voriconazole at the dose of 100 mg twice a day (taken every 12 h) and interferon-γ subcutaneously (1-3 doses in even days) was introduced.

In conclusion, we have reported a case in which a patient who came with pleural effusion and pneumonia in the chest x-ray, CT, and unusual skin lesions caused by A. fumigatus expired after one month. Our report suggests the importance of early diagnosis in children presenting with invasive fungal infections particularly those involving the central nervous system.

Figure 1. a: Cutaneous swelling and granuloma formation on the upper part of back consistent with abscess formation. b: Computerized tomography findings including pulmonary involvement with Pleural effusion. c: MRI of the brain showed lesion in left cerebellar hemisphere and a frontal brain white matter hemorrhagic lesion. d: Numerous fungal hyphae in the skin biopsies with hematoxylin and eosin staining, ×40.
Lasiodiplodia theobromae: an emerging human pathogen


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Objectives: Lasiodiplodia theobromae is a dematiaceous fungus, rarely reported to cause infections in humans. This case-series was conducted to identify the potential risk factors and spectrum of diseases caused by L. theobromae.

Methods: We performed a retrospective analysis of all cases from which the isolates of L. theobromae were accessioned at the National culture collection of pathogenic fungi (NCCPF), over the last 10 years (January 2012 - March 2022). The isolates were retrieved and identified by conventional (colony morphology, color, and microscopic appearance) and molecular (sequencing of ITS region of ribosomal DNA) methods. An in vivo antifungal susceptibility testing (APST) was performed by microbroth dilution recommended by the Clinical and Laboratory Standards Institute (CLSI): M38-A2. The clinical features, demographic details and outcome were recorded.

Results: In 10 years, a total of 20 patients were identified. The median age of all cases was 39.5 (range: 13-71) years and 75% were males. The most common clinical presentation was keratomycosis (12.68%), followed by soft tissue/subcutaneous infection (5.15%), rhinomycosis (5.15%), onychomycosis (5.13%), and pneumonia (1.15%). Most patients were immunocompetent (85%). Among immunocompromised, two patients had acute myeloid leukemia and developed fungal rhinosinusitis while one patient of post-transplantation on immunosuppressive developed subcutaneous tissue infection in the interscapular region. The fourth patient had decompensated alcohol hepatitis, encephalopathy, cirrhosis, and developed pneumonia while he was on mechanical ventilation. Among the various potential risk factors associated with keratomycosis, the most common were, accidental trauma wounds (9.45%), and mosquito bite in the eye in one patient. The culture on Sabouraud’s dextrose agar (SDA) revealed the growth of black mycelial hyphae which failed to sporulate (Fig. 1a). All the isolates were confirmed by sequencing of ITS (internal transcribed spacer) region of the DNA using universal primer ITS1 and ITS2. In vitro antifungal susceptibility testing (APST) was performed using a broth microdilution (BMD) method which revealed variable MIC (μg/ml), i.e., amphotericin (1-2), voriconazole (8-16), itraconazole (0.25-2), posaconazole (1-2). All patients improved on therapy except one patient who succumbed to death due to pneumonia.

Conclusion: Lasiodiplodia theobromae is an emerging cause of human infections in both immunocompetent and immunosuppressed individuals. It is often difficult to identify due to lack of sporulation making morphological identification challenging. Hence, prompt suspicion and rapid diagnosis with guided therapy are necessary for a better outcome.