

Invasive necrotic maxillo-nasal aspergillosis in a child with bone marrow aplasia: a case report

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Y. Bahri¹, S. Ismail¹, N. Ben Sayed², W. Chambah², M. Chatti¹, H. Chouaib¹, N. Sassi², Y. Ben Youssef², B. Sriha³,
H. Regaieg², B. Achour², M. Mokni³, A. Khélif², A. Fathallah^{1*}

1-Laboratory of Parasitology – Mycology, Farhat Hached hospital, Sousse, Tunisia, 2-Department of hematology, Farhat Hached hospital, Sousse, Tunisia, 3- Laboratory of Pathology, Farhat Hached hospital, Sousse, Tunisia

Introduction

Rhino-cerebral fungal infection is a rare opportunistic condition, usually associated with immunodeficiency especially in patients with hematologic disorders. Rare cases involving only the nasal septum were reported and usually described as a complication of surgical intervention or traumatisme in immunocompromised patients. Nasal septal infection can also result from spread of the fungal infection from the adjacent sinuses. The literature review has identified few cases of pediatric patients who developed nasal septal necrosis caused by *Aspergillus* without any antecedent traumatisme or surgery. The aim of our work is to describe a case of maxillo-nasal invasive aspergillosis.

Case report

A 15-year-old patient was diagnosed with a very severe bone marrow aplasia in december 2018. He was hospitalized in the hematology department to receive chemotherapy. On day 24 of treatment, the patient presented fever with left hemifacial oedema and nasal obstruction. A mucormycosis is suspected. Empiric broad spectrum antibiotic and antifungal therapy was initiated with imipenem + teicoplanin + amphotericin B. Two days later, the patient developed a crusty lesion in the left wing of his nose (Figure 1). The mycological examination of the lesion swab showed the presence of *Aspergillus flavus* and *Candida glabrata*.

Despite treatment, the lesion worsened and showed an extensive necrosis (Figure2). The brain and facial mass CT scan revealed a left facial abscess of the maxillary bone extending to the nose without any bone involvement. The patient had a surgical debridement of the necrotic tissue. Histopathologic and direct examination of the necrotic tissue showed abundant septate hyphae (Figure 3,4) . The culture yielded *Aspergills flavus* (Figure 5,6) and *Candida glabrata*. Amphotericin B was therefore replaced by Voriconazole. But the clinical course was marked by the relapse of extensive necrosis with a fatal outcome.



Figure 1 : Necrosis of the nasal septum



Figure 2: Necrosis of the nasal septum

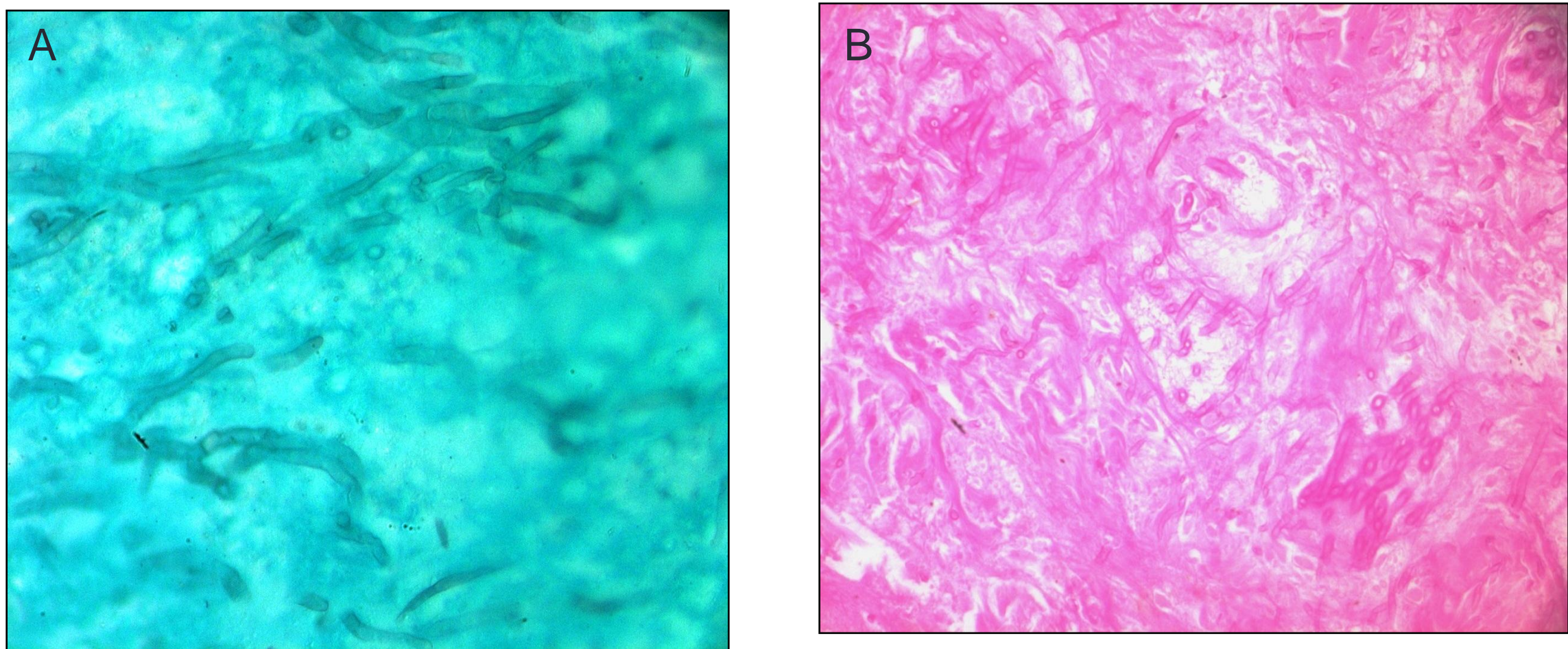


Figure 3: Histopathological examination of necrotic tissue showing abundant hyphae. A- Gomori-Grocott stain. B- Hematoxylin eosin stain



Figure 4: direct examination of the necrotic tissue



Figure 5: Culture: macroscopic morphology of *Aspergillus flavus*



Figure 6: Culture: microscopic morphology of *Aspergillus flavus*

Discussion and conclusion

Isolated nasal septum necrosis is a very rare and severe entity. The diagnosis of invasive nasal aspergillosis requires histopathologic examination and direct examination with culture of the debrided nasal tissue that may show invasive septate hyphae.

Isolated nasal septum necrosis is usually described as a complication of nasal traumatisme or surgery, sinus or dental infection [1, 2]. According to Naeemet and al. only two cases of invasive maxillo-nasal aspergillosis have been reported without antecedent of traumatic event in an immunocompromised children [3]. Once nasal septal fungal infection is suspected, treatment that includes surgical debridement and antifungal agents must be promptly initiated because of the potentially life-threatening consequences of delayed therapy [3]. Voriconazole is the primary drug for the treatment of invasive aspergillosis [3] .

The prognosis of invasive aspergillosis remains unfavorable despite prompt management due to clinical heterogeneity and diagnostic difficulties, therefore early diagnosis and treatment are essential to prevent death.

References:

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