



Rhinocerebral Mucormycosis in the diabetic: about a case and review of literature

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ABSTRACT

*Introduction - Zygomycosis are invasive infections due to the proliferation of cosmopolitan mushroom in tissues. Their evolution is rapid and fatal in immunocompromised patients. The authors are reporting a recent case of rhinocerebral zygomycosis in a diabetic patient. Observation - A 49 years old patient with type 2 diabetes evolving for 10 years in a state of ketoacidosis was hospitalized in the ENT department of the University Hospital Mohammed VI for a foreign body to the left ear. The patient had cellulitis of the entire parotid region, posterior parotid and left jugular-carotid region; refractory to antibiotic treatment. A biopsy was sent to the Parasitology and Mycology laboratory of Avicenna Military Hospital witch the mycological study showed wide siphoned hyphae of zygomycosis. Culture has isolated a strain of *Rhizopus oryzae* confirming the diagnosis suspected. Pathological exam showed necrotic tissue with inflammatory elements and pathogens type filament, not septated, invading vessels and nerves. Despite treatment with amphotericin B and surgical excision, the lesions spread to the orbital region and then to the brain, leading eventually to death. Conclusion- Rhinocerebral mucormycosis is an aggressive fungal infection particularly affecting unbalanced diabetic patients. Mycological diagnosis allows an early treatment.*

Keywords: diabetes, *Rhizopus oryzae*, mycological exam.

INTRODUCTION

Zygomycetes are mushrooms causing invasive infections due to proliferation in tissues of cosmopolitan fungi: *Rhizopus*, *Mucor*, *Rhizomucor*, and *Absidia*. They are rare; occurring in diabetic, immunosuppressed or post-traumatic patients and their development is most often fatal. The authors report a case of a rhinocerebral diabetic zygomycosis and discuss the diagnosis and the

therapeutic modalities for this serious disease.

MATERIAL AND METHODS

Case presentation

This is a 49 years old patient with type 2 diabetes for 10 years in a state of ketoacidosis. He was hospitalized in the ENT department of the Mohammed VI University Hospital for a foreign body in the left ear. The patient had cellulitis of the entire parotid region, posterior parotid and left jugular carotid region, resistant to antibiotic treatment. He benefited from a biopsy sent to the Parasitology and Mycology Service of Avicenna Military Hospital which the mycological study showed wide siphoned hyphae typical of a zygomycosis infection.

The culture result was an isolation and identification of a strain of *Rhizopus oryzae* confirming the diagnosis of the mentioned mucormycosis below. Pathological examination showed essentially necrotic tissue dotted with inflammatory elements and pathogens type filament branched at right angles, not septated, invading vessel walls and nerves. Despite treatment with amphotericin B and surgical excision, the lesions spread to the orbital region and then to the brain, leading eventually to the death of the patient.

RESULTS AND DISCUSSION

The mucormycosis is an opportunistic infection caused by fungi of the order Mucorales [1]. These organisms are ubiquitous, saprophytes, found in moldy fruits and bread and in decaying organic materials [1, 2]. The rhinocerebral infection is triggered by inhaling spores that attach to the nasal passages and sinuses. The extension was initially made to the ethmoidal, maxillary, frontal and sphenoid sinuses rarely and secondarily to the orbit and the intracranial fossa. For some authors, the infratemporal fossa is tank mucormycosis [3]

The pathogenicity of these fungi is related to their angio- invasive vascular thrombosis and resulting tissue necrosis coagulation [2]. Ischemic phenomena are also responsible for tissue acidosis which maintains the development of the fungal infection [3]. Diabetes seems to aggravate these phenomena necrosis lesions already present in microangiopathies [2]

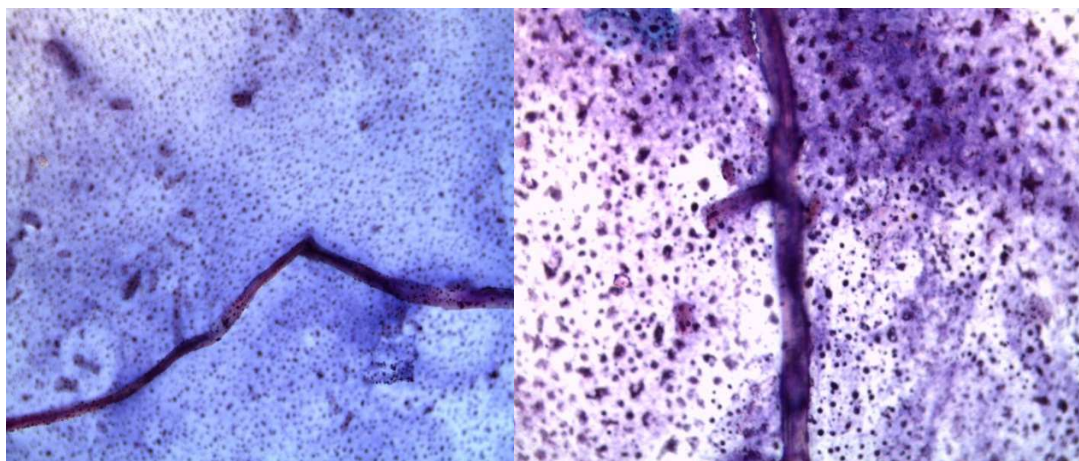
The clinical manifestations are variable in rhinocerebral mucormycosis. Fever, the earliest symptom, can remain isolated or lacking in 50 % of cases. There may also be headaches, sometimes blackish rhinorrhea. In case of oropharyngeal invasion, the presence of a necrotic slough soft palate is highly evocative. A secondary osteolysis is possible, as was the case in our patient with the lytic scanner process centered on the jaw [3].

The diagnosis is a precocious and deep biopsy. Indeed, direct mycological examination allows a rapid diagnosis taking into account the clinical signs and the patient's immune status, and shows mycelia hyphae, thick, short, non septated, often with straight, sporangic or varied branches of cysts by gender. The Sabouraud culture confirms the diagnosis and determines the species responsible. Histological examination confirmed the depth reached after special stain.

The establishment of a prompt treatment promotes a good prognosis. It can be started after a positive direct mycological examination. Surgical resection of necrotic tissue is necessarily associated with the medical treatment that is based on intravenous amphotericin B (1.5 to 1 mg / kg per day). Other antifungal imidazoles in the family are being studied including Posaconazole. The duration of the treatment is at least 12 weeks.

CONCLUSION

Rhinocerebral mucormycosis is an aggressive fungal infection particularly affecting unbalanced diabetics. Mycological diagnosis allows for early diagnosis. Patients' survival depends on the speed of their multidisciplinary care.



200 x

Figure 1 : Direct exam of biopsy : thick mycelia hyphae non septated :zygomycosis (MGG stain)

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