MUCORMYCOSIS:
TWO CASES REPORT

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1. INTRODUCTION

Mucormycosis is an acute infection caused by opportunistic, saprophytic aerobic fungi of the Mucoromycotina subdivision (Zigomycetes) and the Mucorales order. Several clinical forms of mucormycosis have been described: rhino-orbital-cerebral, pulmonary, gastrointestinal, mucocutaneous and disseminated, the first is the one that is usually associated more with decompensated diabetic patients, immunosuppressed or with hematological diseases.[1,2]

Rhino-orbital-cerebral mucormycosis (ROCM) is of rapid progression and high morbidity and mortality in immunosuppressed patients in need of multidisciplinary medical and surgical management.

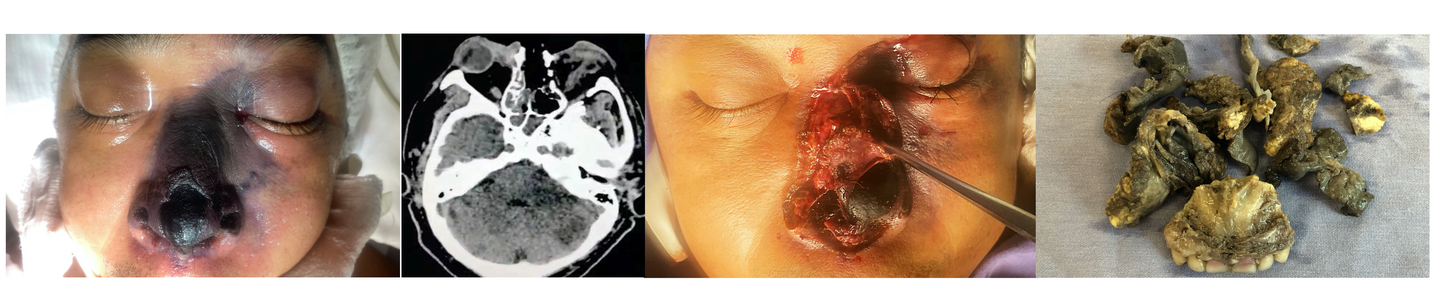
2. OBJECTIVE

To report the clinical management of mucormycosis in two clinical cases, with an analysis of the results and associated comorbidities.

3. CASES

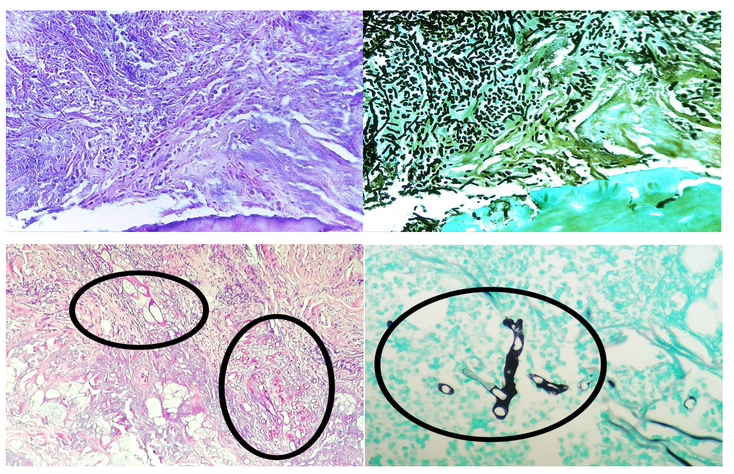
Case 1: 58 – year – old man with diagnosis of type 2 diabetes with poor adherence to treatment. He presented asymptomatic ulcer on the hard palate of two weeks of evolution, 1.5 cm in diameter with a necrotic background and bony exposure in the center, irregular erythematous edges and a fetid aroma. CT scan shows hyperdense areas surrounded by hypodense halos in the palatal process of the maxillary bone, perforation of the anterior wall of the maxillary sinus and thickening of the sinus membrane. An incisional biopsy was performed with a report suggestive of mucormycosis infection. Treatment for DM2 is adjusted and liposomal amphotericin B is started at a dose of 5mg/kg/day. Type III A maxillectomy with a bilateral Weber Ferguson approach was performed. Medical discharge is granted 2 weeks after surgery and medical tratment.

Case 2: 41- year- old man with type 2 diabetes, without treatment. He was admitted to hospital with data suggestive of respiratory infection due to SARS CoV2 as well as severe diabetic ketoacidosis. He is admitted to the intensive care unit to start multi-organ support. There is a change in color in the region of the nasal pyramid suggestive of skin necrosis. In the oral cavity, a crusty lesion measuring approximately 2 x 2 cm can be seen that compromises the hard, ulcerated palate. CT scan with hyperdense areas surrounded by hypodense halos in the palatal region as well as ethmoid cells and sinus membranes. Invasive fungal infection is suspected and it is decided to start daily deoxycholate amphotericin B at a dose of 5mg/kg/day. Cleaning and surgical debridement are performed in the operating room. The operative findings included necrosis in the oral cavity, with involvement of the nasal septum, nasal turbinates, mucosa of the hard palate, skin of the nasal pyramid, upper and lower eyelids, as well as the left eyeball.



4. RESULTS

The histopathological result in both cases reports proliferation of elongated, cylindrical, non-septate cell structures, some of which form acute angles, compatible with hyphae with degenerative characteristics interspersed with non-vital bone tissue. Both presented positive PAS and Grocott stains, confirming the diagnosis of fungal infection by Rhizopus spp (mucormycosis).



In case number 1, good results were obtained with surgical medical management and 2 years after initial treatment, the patient continues with his prosthetic rehabilitation. In case number 2, death occurred despite medical-surgical treatment, with confirmatory diagnoses of acute respiratory infection due to SARS Cov2, diabetic ketoacidosis and rhino-orbital-cerebral mucormycosis.

5. DISCUSION

This fungal infection normally occurs in immunocompromised hosts, mainly decompensated diabetics. 2 Mucormycosis was considered fatal until amphotericin B was introduced as a treatment. Patients who are treated with amphotericin B are 4 times more likely to survive than patients not treated with it. The treatment should be adjusted according to the characteristics of the patient, the progression of the disease and the toxicity of the agent, a multidisciplinary approach will always be necessary.[1,5] Due to vascular thrombosis and tissue necrosis, drug delivery to the site of infection is poor and, therefore, conservative management alone is not effective. Extensive debridement of mucormycosis, wide resection of necrotic soft tissue and bone, and in some cases evisceration of the orbit are necessary. [1,3] Survival rates are higher when medical and surgical measures are performed together.[1,6]

6. CONCLUSIONS

Mucormycosis is one of the most lethal infections. Even in specialized centers, mortality averages 50%. [4] The most important prognostic factor is the status of the underlying disease. Therefore, the first step is the emergency care of the underlying diseases, as well as their strict control, to achieve a favorable prognosis.[1,2,5]

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