



A CASE REPORT OF RHINOCEREBRAL MUCORMYCOSIS LAVANYA R RAMACHANDRAN

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Abstract : ABSTRACT Rhinocerebral Mucormycosis is the most common and fulminating type of Zygomycosis. It is associated with acute onset of diabetes mellitus, hyperglycemia and ketoacidosis or with debilitating diseases such as leukemia and lymphoma. Several species of zygomycetes have been reported as etiological agents but majority of cases are caused by *Rhizopus arrhizus*. This is a case report of 50 year old female patient who had uncontrolled diabetes admitted with signs of chemosis, peri orbital cellulitis, ptosis and orbital pain. Clinical specimen (Tissue debris) obtained by orbital decompression, was processed by direct examination of KOH mount and culture onto Sabourauds dextrose agar. *Rhizopus* was isolated. With early intervention, prompt diagnosis and appropriate anti fungal treatment the patient was discharged after complete cure.

Keyword : KEY WORDS Mucormycosis, *Rhizopus*, DM, SDA, Antifungal

INTRODUCTION

Mucormycosis refers to different diseases caused by infection with fungi in the order Mucorales. The number of species causing human Mucormycosis has expanded considerably in the past 2 decades with improvement in culture based morphologic identification and application of more precise molecular diagnostics for fungal identification. *Rhizopus* species are the most common causative organism (1) followed by *Mucor* species, *Cunninghamella bertholletiae*, *Apophysomyces elegans*, *Absidia* species, *Saksenaia* species, *Rhizomucor pusillus* with other species representing less than 3% of culture confirmed cases. Agents of Mucormycosis are ubiquitous fungi in the environment that are commonly found in soil and decaying matter (2). Due to its ubiquitous nature most humans are exposed to these organisms on a daily or weekly basis. Nonetheless they rarely cause disease because of the low virulence of the organism. These fungi characteristically produce large, ribbon like aseptate hyphae that are irregular in diameter. Identification can be confirmed by observing the characteristic sac like fruiting structures which produce internally spherical yellow or brown spores. Spores range from 3 to 11µm in diameter and are easily aerosolized, dispersed and cause infections in human when inhaled or through the cutaneous or percutaneous route with traumatic disruption of skin barriers due to burns or direct injections or catheters. A significant increase in the cases of Mucormycosis has been observed in

immunocompromised hosts with poorly controlled Diabetes mellitus(3) those who are receiving steroids, have neutropenia, haematologic or solid malignancy have undergone transplantation, have iron overload and who have burns are at risk for contracting the disease.

CASE REPORT

A 50year old female patient was admitted in ENT ward, GRH Madurai With History of swelling over the left eye and diminished vision for past 5 days.(fig.1)



Fig.1

She is a known case of DM Type II for past 2years, but on treatment for past 6 months. Her routine investigations revealed, Hb – 9.8, TC – 12500, ESR – 25mm, DC – P55 L25 E3, Urine – alb(nil), sugar(2+), deposits(nil). Random blood sugar – 355mg/ dl. CT brain – sinonasal inflammation with pre and post septal cellulitis and early cavernous sinus extension (? Fungal mucormycosis). Patient was started on insulin, to control DM. Orbital decompression was done and treated with parental antibiotics. Tissue debris from nasal region were sent to our laboratory for fungal culture to R/o Mucormycosis.



Fig. 2

Direct examination of specimen under 10% KOH mount revealed large aseptate hyphae (fig.2).

The specimen was inoculated in duplicates of Sabouraud's dextrose agar (SDA) and one was kept at 25°C and other kept at 37°C. Both the specimen showed growth within 2 days of inoculation.



Fig. 3

Macroscopic appearance on SDA showed, colonies covering the agar surface with dense cottony growth which was white first and later became gray (fig.3)

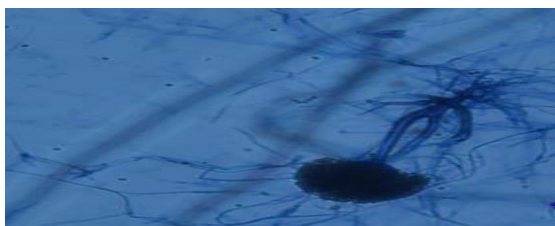


Fig. 4

Microscopic examination of colonies with Lactophenol cotton blue (LPCB) – showed broad non-septate hyphae with nodal rhizoids directly beneath unbranched sporangiophore and ovoid columella (fig.4).



Fig. 5



Fig. 6

The slide culture technique was performed to confirm the diagnosis and for more detailed morphologic identification (fig.5 & 6).

After the report was sent, the patient was put on with Antifungal treatment immediately - IV Amphotericin 0.7mg/kg/day for 21 days. The patient improved with treatment and DM was also under control.

DISCUSSION

Rhinocerebral Mucormycosis has high mortality and morbidity rate(3). However with early diagnosis, surgical intervention combined with antifungal the patient was relieved of symptoms. (4 & 5). This case report describes a 50-year old female with uncontrolled DM, progressive orbital cellulitis who was Saved

due to co-ordinated effort by Microbiologists and clinicians. The site of infection and underlying host factors are key prognostic determinants of Mucormycosis outcome. Most patients who develop Mucormycosis die within 12 weeks of diagnosis. Correction of underlying immune impairment, combined with aggressive multimodality treatment approaches offers the best chance for patient survival.

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