

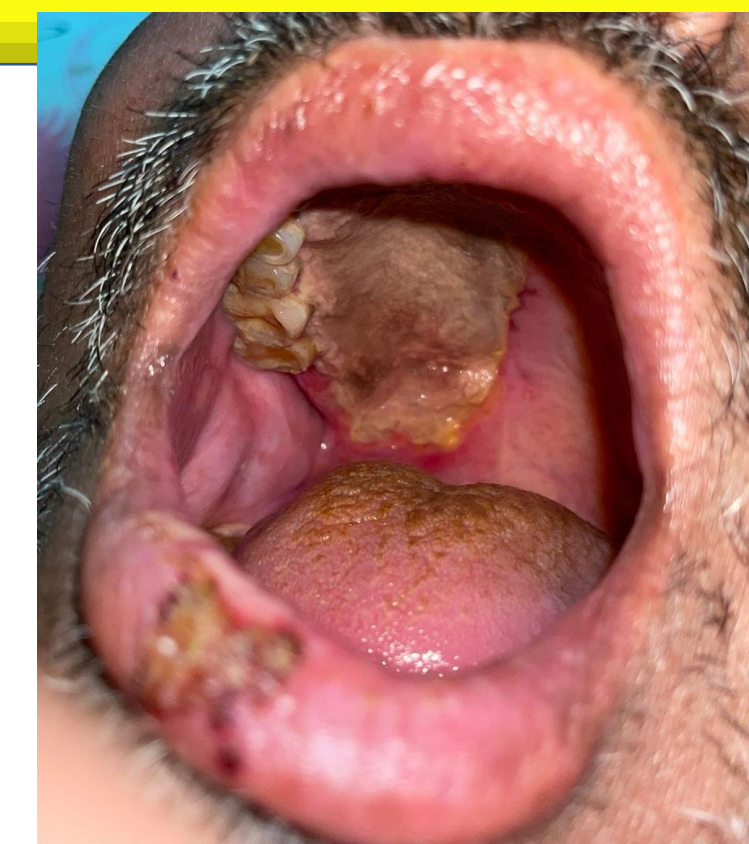
INTRODUCTION

- Mucormycosis (phycomycosis, zygomycosis) is a rare opportunistic angioinvasive fungal infection caused by fungi belonging to the **Mucorales order** and the **Mucoraceae family**
- Mucormycosis is transmitted by inhalation, ingestion or direct inoculation of spores and was first described by Furbinger in 1876.
- **Predisposing factors** include immunocompromised states like uncontrolled diabetes, lymphomas and leukemias, renal failure, organ transplant, long term corticosteroid and immunosuppressive therapy, cirrhosis, burns and Acquired Immuno Deficiency Syndrome (AIDS).
- In diabetics, the acidic pH produces more free iron by reducing its binding to transferrin which impairs neutrophilic function thus producing suitable conditions for fungal multiplication.
- Mucormycosis infection in diabetes may result from tooth extraction, intramuscular injections and ophthalmic surgeries.
- Rhinocerebral Mucormycosis is an infection of paranasal sinus origin, caused by inhalation of Mucor spores and their spread to orbit or the brain.
- **Successful management** of this fatal infection requires early identification of the disease, aggressive and prompt medical and surgical interventions to prevent high morbidity and mortality associated with this disease process.

We report here with a case of rhino orbital mucormycosis in a diabetic patient



PAIN AND SWELLING OVER NOSE AND RIGHT SIDE OF FACE AND BLACKENING NEAR RIGHT MEDIAL CANTHUS



BLACK NECROTIC ESCHAR WITH SURROUNDING EDEMA ON HARD PALATE.



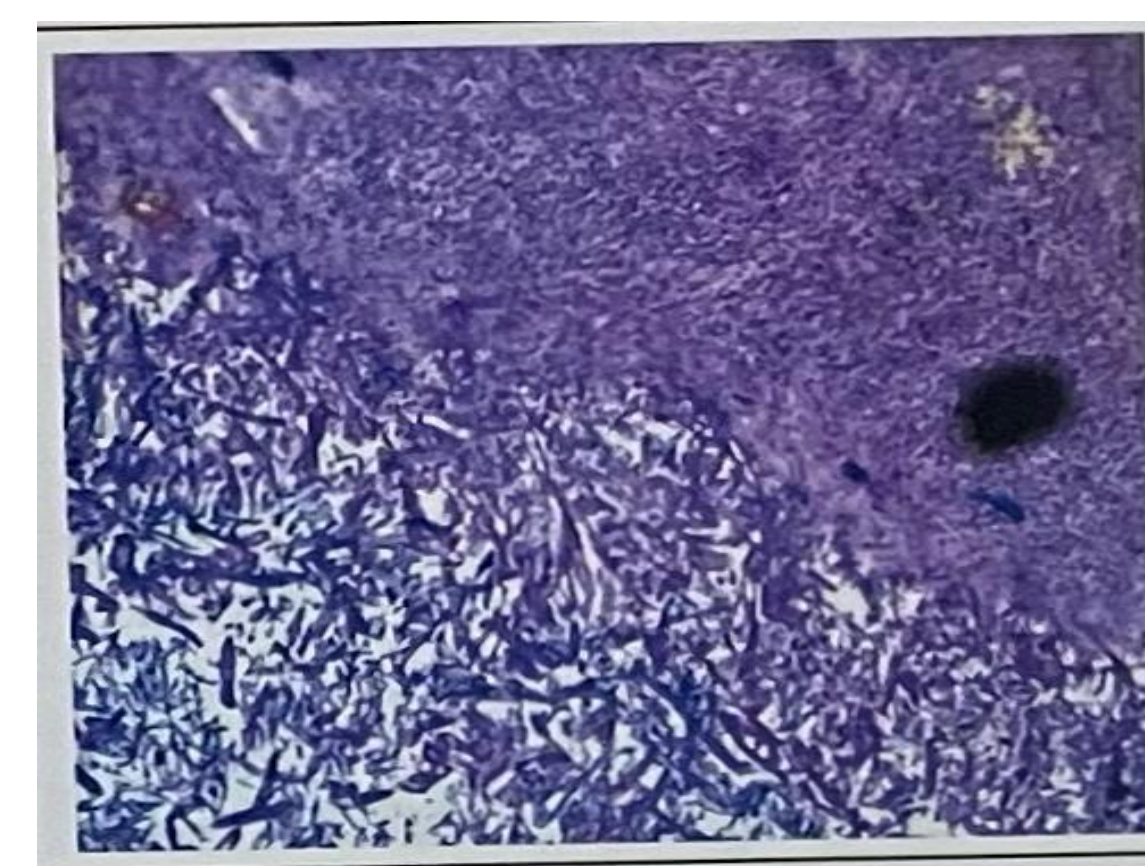
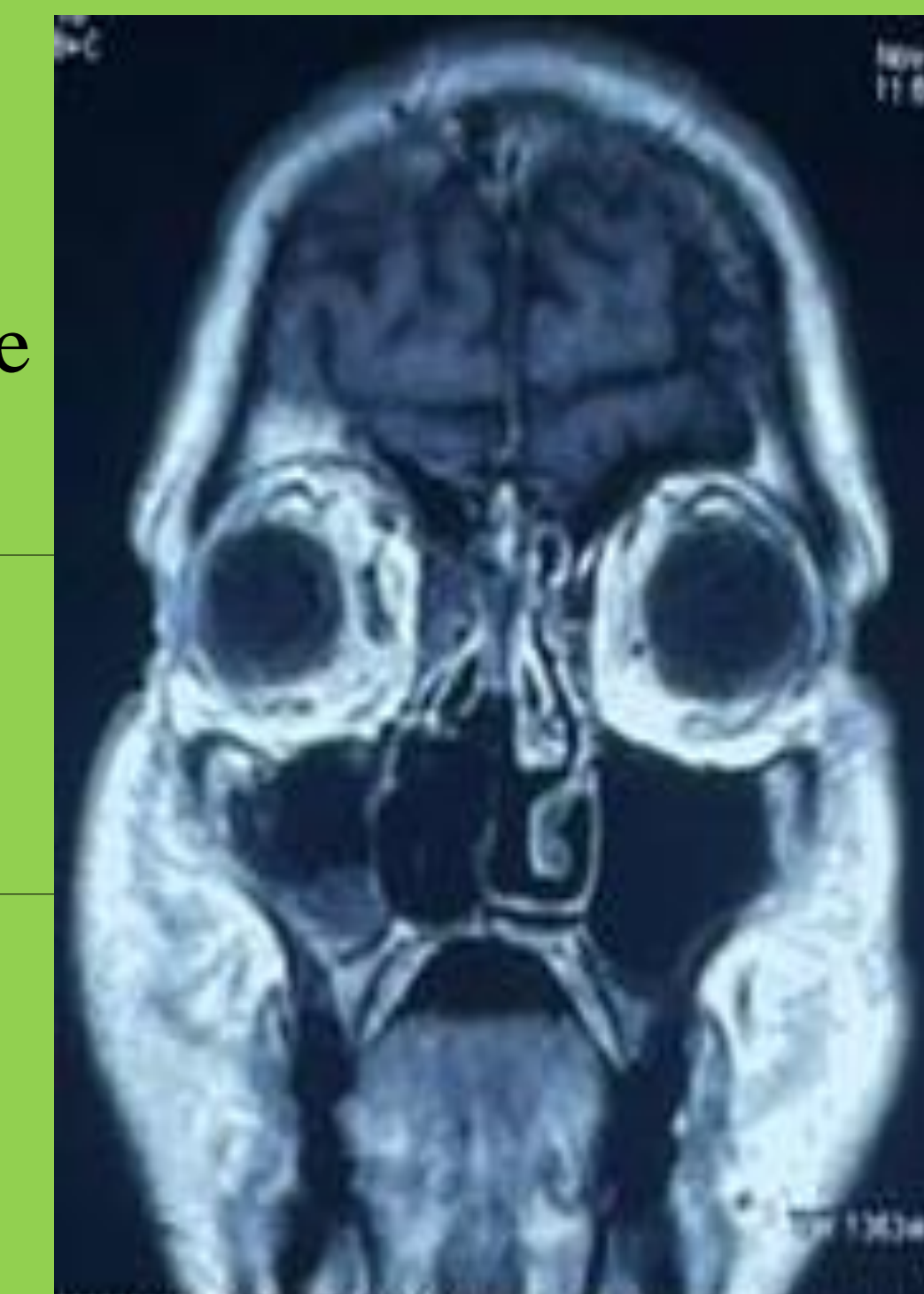
POST OPERATIVE DAY 3 INVASIVE LESION SEEN ON RIGHT MEDIAL CANTHUS AND LOWER LIP



ENDOSCOPIC IMAGE OF BLACK CRUST ON THE RIGHT MAXILLARY SINUS

CASE REPORT WITH INVESTIGATIONS

- A 65 year old male patient, k/c/o diabetes mellitus type 2 and hypertension since 15 years, came to our outpatient department with chief complaints of pain and swelling on right side of nose, face and periorbital region since 15 days.
 - **O/E - FACE** - diffuse swelling over the right middle third of face extending from the lateral aspect of the nose to the inner canthus of the eye and also right periorbital region with blackish pigmentation near right medial canthus.
 - On palpation, the swelling was soft in consistency, non tender with no local rise of temperature.
 - **NASAL EXAMINATION** - Anterior rhinoscopy showed black crusting in right nasal cavity
 - **ORAL CAVITY** - black eschar over hard palate.
 - **OPHTHALMIC EXAMINATION** - right pupil was non reactive
 - **KOH MOUNT** revealed numerous broad aseptate fungal hyphae
 - **CT PNS** showed swelling in right side of face, soft tissue density with air pockets in right nasal cavity, maxillary, sphenoidal, ethmoidal and frontal sinuses and appears to be infiltrating the inferior wall of right orbit.
 - **MRI BRAIN, ORBIT AND PNS** showed right maxillary, ethmoidal and sphenoidal sinusitis, absorbed right middle and inferior turbinates, infero medial wall of orbit fuzzy, findings in favour of **rhinoorbital mucormycosis**.
 - **Provisional diagnosis** of mucormycosis of the maxilla was made
 - **Differentials** includes neoplasia, aspergillosis, osteomyelitis, chronic granulomatous infection, and deep fungal infections.
- On lab investigations, elevated blood sugar levels and neutrophilic leucocytosis were found.



Histopathological report- BROAD ASEPTATE OBTUSELY BRANCHED FUNGAL HYPHAE WITH ANGIOINVASION SUGGESTIVE OF INVASIVE MUCORMYCOSIS.

MANAGEMENT

- **Procedure** - Surgical debridement was done by removal of black crusting with microdebrider from right nasal cavity and septum then inferior turbinectomy with partial middle turbinectomy, right medial maxillectomy with mega antrostomy of right maxillary sinus, orbital decompression were done by removing lamina papyracea, preorbita and fat, amphotericin ointment put in right nasal cavity.
- endoscopic suction and clearance in every 2 days with daily nasal douching.
- **Treatment** - INJ. LIPOSOMAL AMPHOTERICIN B 50 mg/ kg (6 vials) in 500 ml 5 % dextrose.
- inj Zilamac 1 gm i/v 12 hourly
- tab Posaconazole 100 mg 12 hourly
- and supportive treatment
- check CBC in every 2 days and daily monitoring of serum sodium, potassium and creatinine,
- Daily physician check up for raised blood sugar levels and high BP.

DISCUSSION

- Rapid extensive debridement of the whole necrotic tissue is key for faster healing of this condition and it reduces the fungal load and halt the progression of disease.
- Antifungal must be empirically started as the disease has a fast progression rate. Medical treatment of Liposomal Amphotericin B has led to a survival rate of upto to 72%.
- European guideline recommends dosage of 5mg/kg body weight with total accumulated dose of 2.5 to 3g of Amphotericin B.[2]
- The universal risk factor is Diabetes. According to Global guideline for the diagnosis and management of mucormycosis, any diabetic patient with facial pain, sinusitis, proptosis, ophthalmoplagia, is at risk of mucormycosis and warrants a CT or MRI of the head.
- Surgical debridement with clean margins should be achieved in parallel to antifungal treatment.
- Liposomal amphotericin B is preferred compared to the conventional Amphotericin B as it is better associated with fever breakthrough fungal infection, less infusion related toxicity, and less nephrotoxicity. [3]

CONCLUSION

In conclusion, early diagnosis, aggressive surgical debridement, injectable liposomal amphotericin B, topical Amphotericin therapy, control of underlying comorbidities and other supportive measure with close monitoring can remarkably achieve a low mortality in patients with sinonasal mucormycosis.

Reference

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