



MUCORMYCOSIS: IN COVID PATIENT

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INTRODUCTION

Mucormycosis is a rare but invasive, fungal infection mainly found in immunocompromised patients which occur due to the fungi mucormycetes. (Kontoyiannis DP, Lewis RE, 2005). It is a rapidly occurring fungal infection with a high mortality rate. Although rare, the cases of Mucormycosis have been raised abnormally in active and post-COVID-19 patients in India. Many states of India have declared it as an epidemic. Mucormycosis has been reported in COVID-19 positive patients at any time after COVID-19 infection, either during hospitalization or several days to a couple of weeks after discharge.

CASE REPORT

A 50 years, female patient with history of type 2 diabetes mellitus and hypertension since 2 years was admitted in COVID ward. Chief complaints at admission was fever since 10days, shortness of breath since 10days, right sided face swelling since 1 day, cough with hemoptysis since 1day, dropping of left upper eyelid since 4days associated with swelling if same eye. Patient was conscious on admission, but was not oriented to time, place and person. At admission random blood glucose was 400mg/dl with urinary ketone bodies 5.5%, blood pressure 90/70, pulse rate 120/min, respiratory rate 38/min with kusmual breathing pattern and normal temperature i.e. 37.8C.

Patient had history of hospitalization 1week before due to fever and cough. No COVID testing was done at that time and after symptomatic management patient was discharged after 4days. No records of drugs administered during previous hospitalization was found. On eye examination, lid edema with echymosis, proptosis and dilated fundus was there. Right side pupil was round, reactive and normal in size, whereas left sided pupil was fixed mid dilated and non reactive. Extraocular movement of eyes were assessed (refer image). RTPCR was done and patient was found COVID-19 positive.

Patient became a confirmed left rhinorbital mucormycosis one day after admission. SpO₂- 98% at RA

After Initial examination, patient was immediately started regular insulin infusion, injection liposomal Amphotericin B and IV fluids for hydration. RBS was monitored 2hourly, SEFRT. NCCT of PNS and orbit was done.

On day 2nd of admission, patient was conscious and oriented and was on Venturi mask @6L/m, maintaining SpO₂ at 96%.

On day 3rd surgery was performed for the patient and Left medial maxillectomy with left orbital extraction was done under general anaesthesia. During surgery, it was found that mucormycosis was involving whole of nasal cavity with crust present with necrotic tissues. It was removed and sent for histopathological examination. As patient was intubated during surgery, but after surgery extubation trial was failed and patient was transferred to COVID-19 ICU and was put on SIMV/VC mode of ventilator with FiO₂- 100%. Patient was maintaining spO₂ between 85-90%.

However on proceeding days, patient condition was deteriorating and ventilator mode was changed from SIMV to AC/VC mode with TV: 460ml, RR: 20/m, fiO₂ 100%, I:E- 1:2. SpO₂ was maintained at 98%. ABG showed respiratory acidosis with hypokalemia. Intravenous potassium therapy was initiated along with antifungal treatment.

During admission in ICU he undergone following treatments

Inj Midazolam 2mg/hr

Inj. Fentanyl 30ug/hr

Inj vacronium 4mg/hr

Noradrenaline 20ml/hr

Inj. Vasopressin @2 units/hr

Blood investigations

Na 138

Crp 220mg/dl

LDH 1186

Hb 8.9

PCV 27

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RBC 3.05
MCV 91
MCH 29
MCHC 31
RDW 15
Platelets 78
TLC 16.2
Neutrophils 87.2
Lymphocytes 8.4
Monocytes 4.1
Eosinophils 0.2
Basophils 6.1
Ferritin >1650
Pct 0.14
IL6 134

DISCUSSION

It is essential to control blood glucose level as well as diabetic ketoacidosis in vulnerable patients. One should use steroids and immunomodulators judiciously; correct dose, correct timing and duration are essential. First line of treatment of Mucormycosis includes antifungals. However, some patients may eventually require surgery. Experts have said that it is of prime importance to control diabetes, reduce steroid use, and discontinue immunomodulators. (International Diabetes Federation)

To maintain adequate systemic hydration, the treatment includes infusion of intravenous normal saline before infusion of amphotericin B and antifungal therapy, for at least 4-6 weeks. Experts stressed the need to control hyperglycemia, and monitor blood glucose level after discharge following Covid-19 treatment, and also in diabetics. (Chen N, Zhou M, Dong X, *et al*)

CONCLUSION

A new danger has been emerged among COVID-19 patients in India; Mucormycosis, popularly known as “black fungus”. COVID-19 has led to a surge in cases of this potentially fatal fungal infection. Mucormycosis or black fungus is now an epidemic, within the larger pandemic.

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