



A Rare Case of Pansinusitis Fungal Mucormycosis with Orbital Involvement in Post COVID-19 Patient and Its Treatment

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Introduction: Covid-19 pandemic disease and its infections caused may be associated with bacterial and fungal co-infections.

Case Presentation: A 61- year-old male patient, after Covid-19 disease admitted in hospital with the complaints of headache, right eye swelling, watering of right eyes, loss of vision since 2 days, also has history of loss of appetite, no history of febrile illness. Patient having history of diabetic mellitus but it was under control. As per physical examination left eye's vision was reduced but eye movement was present. In right eye there was swelling of periorbital region, redness, watering of

eyes was present and perception of light was negative due to damaged optic nerve. Loss of vision was found, eye movement was not present. Patient having mucormycosis fungal infection which was confirmed on culture test. All blood investigations were done. All reports were normal except white blood cells (WBC) were raised with 13400cu.mm. Random blood sugar (RBS) 250 mg%. Without delay medical treatment was started and patient was kept under strict observation. Spo2 were 97%, pulse rate 78 beats/ min.

Conclusion: Here we would like to bring into notice that, Medical team members should know about the danger of secondary invasive fungal infection in a patient after Covid 19 disease. This type of cases can be prevented by using hygienic technique while handling of patient and proper standard treatment. It is necessary to prevent the spread of infection and its mortality and morbidity. Hence, medical practitioners should be aware of early clinical manifestation of the disease.

Keywords: COVID 19; orbit; mucormycosis; fungal infection.

1. INTRODUCTION

The Covid 19 is a pandemic disease spreaded all over the world, Covid 19 infection directly spreads in respiratory system. Coronavirus 2 is becoming mild to moderate life- threatening pneumonia i.e. lung infection. This condition is associated with co-morbidity i.e. diabetes mellitus, or any other lung diseases. It may be developed due to long term hospitalization and it causes nosocomial infection such as ventilator-associated pneumonia [1,2].

In India incidence rate of type 2 diabetes mellitus (8.9 % of adults, 77 million patients), it is a very well known risk factor. After Covid-19 patient developed Pansinusitis fungal mucormycosis with orbital involvement [3]. Previously mucormycosis was also called as zygomycosis, it mostly affects people who have serious health issues or who are taking medicines that lower the body's ability to fight germs and sickness. This disease mainly affects on the lungs or sinuses after inhaling fungal spores from the environment.

2. CASE PRESENTATION

A Covid 19 disease medical recovered case was taken by Acharya Vinoba Bhave Rural Hospital, DMIMS (DU) Sawangi, Wardha, and Maharashtra. India. This complicated case was managed by hospital's expert team members.

A 61-year-old male after covid-19 disease admitted in hospital's positive intensive care unit with the complaints of headache over both sides, Right eye swelling and watering of eyes and right eye vision was reduced since 5 days. Patient has past history of covid-19 infection and patient's report was RT-PCR (Reverse transcription

polymerase chain reaction) positive with HRCT (High-resolution computed tomography) score was 14/25.

Now patient had complaints of headache over both sides since 5 days, insidious onset, gradually progressive, moderate in intensity, continuous aching type of pain and no any specific aggravating factors, relives partially on taking medications. The pain was radiating to whole of head and eyes. Patient had swelling over right eye since 5 days which was insidious onset, gradually progressive. No specific aggravating or reliving factors found. Loss of vision was found in right eye since last 5 days, onset was insidious, gradually progressive. Patients having history of loss of appetite since 5 days was present. No history of fever, anosmia i.e. loss of smell, loss of taste, nose block, earache, discharge, trauma, sorethroat, cough, breathing difficulty, weakness of facial muscles, no history of seizure, loss of sensation over face, chest pain mentioned.

Patient had past history of acute stroke- 8 years back, with hospitalization for 1 month. History of diabetes mellitus since 8 years were present but it was under control and he was on injection insulin. No history of hypertension, Asthma and tuberculosis mentioned. Bowel and bladder activity were normal. Patient has history of normal sleeping pattern but it has been disturbed in the course of the disease, no history of addiction, no significant family history was mentioned.

Previous medical treatment history was a tablet prednisolone 30 mg BD for 3days, 20 mg BD for 3 days, 10 mg BD for 3 days. post discharge medicine was prescribed, Tablet Clarithromycin 250 mg BD for 7 days, tablet pantoprazole 40

mg-OD for 7 days, tablet limcee BD for 1 month, tablet zinc OD for 1 month, and tablet Dolo TDS for 7 days, and syrup cheston 2tsf for 7 days.

On examination patient was conscious and oriented to time, place and person. Above vision problem was found, no abnormality were found on ear nor nasal external deformity were found. In nasal mucosa blackish crusts present in left nostril and whitish discharge present in right nostril. Bilateral maxillary and ethmoidal tenderness was present. In oral cavity blackish discoloration of hard palate were showed with mildly throat congestion. No history of pallor, icterus sign and cyanosis was present.

Patient's Blood pressure was 120/80 mmHg, pulse rate 78 beats/ min, Spo2 was 97% at Room air temperature. For present complaints treatment was given i.e. temperature, pulse, respiration and blood pressure charting strictly 2 hourly, spo2 monitoring, Strict RBS (Random blood sugar) charting 4 hourly and it raised at 300-360mg/dl, injection insulin subcutaneously as per sliding scale given, all blood investigations were done. Inj. Augmentin 1.2gm intravenously BD, Inj. Clindamycin 600mg intravenously BD, Inj. Amphotericin B 50 mg intravenously in a Dextrose 5% over 6 hours after sensitivity testing with 1 gram in a Dextrose 5%, Inj. Mucomix 500mg intravenously BD, Inj. Linezolid 600 mg intravenously BD, Inj. Pan 40mg intravenously BD, Inj. Neomol 100ml intravenously BD, Tablet Itraconazole 200mg BD, Nasal drop Otrivin 2 drop TDS, Nasal drop Nasoclear 2 drop TDS, Eye drop 4 Quin KT QID, Eye drop I DEW QID given.

3. DISCUSSION

Mucormycosis is a rare fungal infection occurs due to exposure to mucor mould, present in soil, plants, decaying fruits and vegetables and it is present in an air and in the nose and mucus of the healthy people which affects on the sinuses, brain and lungs. Mucormycosis is a severe fungal infection. In post Covid patients recently this is very serious health issues. To prevent and treat mucormycosis infection as early as possible some new strategies are urgently needed [4].

Patients suffering from the fungal infection mostly have clinical features i.e. stuffy nose, nasal bleeding, swelling and pain over eyes, drooping of eyelids, blurred and loss of vision. With black

patches of skin around the nose. The exact prevalence rate of mucormycosis in India is not known [4,5].

A prospective research study was conducted by the researcher, 38 patients were diagnosed as a mucormycosis fungal infection. Case were analyzed related organ and part of body involvement, underlying disease, and species of fungi. 61.5% patients were diagnosed as a Rhino orbital mucormycosis, 31% of patients had cutaneous symptoms, 5% of patients had gastrointestinal infection and 2.5% of patients had pulmonary infection, 56% of diabetes patients had significant risk factors of rhino-orbital- cerebral symptoms. 16 isolated were sensitive to amphotericin B. Surgical treatment as per standards and combination of medicines given was significant, it was better to all patients than amphotericin B alone. Overall it was necessary to create awareness among clinicians regarding fungal diseases and its standard treatment. It was very important to reduce the fatal outcome of disease [6].

In our case when patient came at hospital, as soon as possible all investigation were performed as required according to patient's condition, immediately disease related standard medical treatment were started. Immediately surgeon plan for debridement but due to optic nerve damage, that surgery was cancelled.

In a case report mentioned regarding Rhino-orbital mucormycosis. this disease mostly affects on paranasal sinus and nasal cavity and this is rare infection which is caused by black fungus. In a paper presented about an uncontrolled diabetic male patient. He had symptoms of orbital inflammation, headache, fever and severe visual loss. All investigation was done and after diagnosis standard treatment was started. Surgical debridement and antifungal therapy was given. It helps to reduce the spread of infection [7].

A prospective research study was conducted, mentioned that Mucormycosis is caused by Mucorales and mostly present in uncontrolled diabetics mellitus patients in India, this study was conducted in Indian at major tertiary region, two in north and two in south to compare the epidemiology of disease, treatment modalities and outcome of disease between north and south region. Total 388 cases of mucormycosis were included while conducting the research

study. And total death rate was 46.7 percent. In this study 56.8 percent patient were uncontrolled diabetes and 10.2 percent were trauma the common risk factors. Overall, 51.9 percent *Rhizopus arrhizus* was the predominant agent identified, 12.6 percent were *Rhizopus microsporus*, 9.2 percent were *Apophysomyces variabilis* and 2.5 percent *Rhizopus homothallicus*. During study it was observed that, while comparing the both regions the death rate was significantly associated with lung infections and gastrointestinal, 82.7% majority cases were recorded from north region India; uncontrolled diabetic mellitus patients were 157 and post-tubercular mucormycosis patients were 21. It was significantly associated with north Indian cases. No significant difference was found among the species of Mucorales and treatment modalities between the two regions. The death rate was considerably high in north Indian patients 50.5 percent compared to 32.1 percent in south India. The study shows maximum number of mucormycosis cases were found in uncontrolled diabetic mellitus patients of north India and *R. microsporus* and *R. homothallicus* across India causing the disease [8].

4. CONCLUSION

In India 70% cases of mucormycosis mostly seen in diabetes mellitus patients. Sometimes it happens because of the symptoms are nonspecific and delay in diagnosis of disease. Not treated properly infection spread towards brain and all over the body and may cause death. Sometimes in uncontrolled mellitus patients that are diagnosed mucormycosis we should suspect a cerebral spread of the fungi if after 24 hours since the beginning of treatment. When patient came in hospital his condition was not good but after treatment condition was improved. Regarding our patient's health condition I would like to stress the idea, that even we encountered a difficult situation, immunocompromised patient with mucormycosis, as early as and correct by medical and surgical treatment saved patient's life and determined a good recovery of the vision system and patient's health status. And prevent mortality and morbidity among patents.

CONSENT

While preparing a case report and for publication patient's informed consent has been taken.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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