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Original Article

Rhino Orbital Mucormycosis in Post COVID-19 Patient

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Abstract

Introduction: A case report of post of COVID-19 Rhino- orbital Mucormycois infection and its management.

Presentation of Case: One case was diagnosed with COVID – 19 and treated according to the treatment regimen as per ICMR protocols following recovery the patient was discharged. Again the patient came with the complaints of swelling and pain with color changes in the left eye on the 12th day of discharge. Then, the diagnosis of mycormycosis was established after obtaining Computed tomography. Initially, the patient was treated with insulin therapy for control of blood glucose and also with Inj. Amphotericin B infusion along with routine other treatment. There was a progress in the severity of the signs and symptoms of Mucormycosis for the patient on discharge.

Discussion: Mycormycosis generally develops due to comorbidity and immunosuppression. It mainly affects the head and neck, the head which has mainly the sinuses and connection of the respiratory system, further the head which consists of cranial structures and also visional tract. Hence, an early diagnosis and prompt treatment is needed for a good prognosis. Conclusion: Further, more research is needed to be carried out about opportunistic infections on COVID-19 regarding prevention, treatment modalities to reduce incidence and spread. There is a need for every organization to develop standard protocol according to ICMR guidelines for the treatment and control of this disease.

Keywords: Covid-19, mucormycosis, rhino-orbito cerebral mycormycosis, opportunistic infections and fungal infection

Introduction

The sudden outbreak of 2nd wave has led to many opportunistic infections such as fungal and candid infections and fungal infections are more common now In India to the persons with long term of steroids use and comorbidity. Approximately 3–4 lakh people are explored newer covid-19 positive daily. The prevalence of mucormycosis differs between 0.005 and 1.7 per million populations around the world, but in India, its about 80 times higher (0.14 per 1,000) and it is projected that India has the highest cases of Mucormycosis in the world.[1] Mucormycosis is a fungal infection which caused by the Muor mold.[2] According to the press report from the health secretary Pondicherry on 31st May, there are 40 Mucor Mycosis with Covid-19 cases documented to the hospitals in Pondicherry and with two deaths. As of today our Health Ministry, joint secretary has directed that the states to address Mucormycosis as epidemic. After two states in India such as Rajasthan and Telangana, The Tamil Nadu Government has also declared this as a notifiable disease under the epidemic act.

The challenge before the health personnel in developing countries like India is to prevent the spread of the disease and complications such as Mucormycosis during the recovery period of Covid. Even after, we try our best to protect our self from the spread of the disease this has become another threat posed by the fungus since we are almost in the edge community spread. Hence, Mucormycosis is adding furthermore burdens to the country which is already in a deep Covid crisis.

Herein, there is a detailed case report for a case that was documented as Covid-19 positive with comorbidities and the same case was developed rhino-orbito cerebral mucormycosis after some time from the admission.

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Presentation of Case

A 50-year-old female was admitted to the hospital, with a history of fever for 2 days, cough and cold for 4 days on April 2021. She presented with high-grade fever, cough, cold, body ache for which Oropharyngeal swab was sent for RT-PCR and it was found as Positive and she was diagnosed as severe acute respiratory syndrome coronavirus 2. The patient had a history of having diabetes, hypertension, and thyroid disorder for the past 4 years and she was treated with standard protocol along with her routine treatment for DM and Hypertension. She was also monitored for oxygen saturation and it was maintained normal throughout her hospitalization. After a week, her Covid symptoms were reduced significantly and her health status was also improved. Hence, she was discharged from the hospital.

After 12 days, the patient came with complaints of swelling of the right periorbital region, sudden right side orbital pain, and blurred vision at right side eye for the past 3 days, and also history of nasal obstruction with black color changes over the right inner side of the eye. On physical examination, it was found that the patient is having unilateral axial ptosis, pain over the orbital region, swelling, and color changes over the right side eye. On computed tomography scan, 1mm mass was found in the bone and soft tissue towards the right eye and mucosal tenderness was present.

Her blood sugar was controlled by the administration of hypoglycemic agents such as Inj. Actrapid 8-8-8 units S/C, Inj. Monotard 4-0-4 units S/C, T. Losartan 25mg (0-0-1), T.Amlodipine 5 mg1-0-0 was prescribed to control her blood pressure. She had been treated with Infusion. Liposomal Amphotericen B 5 – 10 mg/5 g (360 mg OD), Inj. Piptaz 4.5 g IV BD, Inj. Flagyl 500 mg IV TDS, Inj. Amikacin 500mg IV BD, T. Olflox HS, and T. Itraconazol 200 mg 1-1-1in order to control the fungal infection additionally she was also on Moxifloxian eye drops 2 drops BD. Further T. Paracetamol 500 mg 1-1-1 was administered to bring down the temperature and T. Rantac 150 mg 1-0-1 (before food), T.BCT 0-1-0 was also advised for to control side effects. The patient was also on T. Ecosprin 75mg 0-1-0 to reduce the risk of complications during post Covid period. T. Gabaride NT 0-0-1/2 was used as a analgesics. After 2 weeks of her admission, the patient had shown steady progress followed by the commencement of the above-prescribed drugs.

Discussion

Mucormycosis is a rare, aggressive, and invasive fungal infection since it mainly affects the vital organs such as brain, eye, and lungs and which is been present from ancient days. Although it is a rare serious condition, it can be treated with the early identification and treatment of the patients.[3] These types of infections are more common on the vulnerable group of people such as uncontrolled diabetic mellitus and immune suppression due to prolong use of corticosteroids.[4,5] Further the treatment for the patient needs in multiple dimensions approach such as controlling the hyperglycemia and treating the underlying causes can reduce the fatality and mortality among the post-Covid- 19 patients.[6,7] The diagnosis of mucormycosis is mainly depends on its clinical manifestations and its pathological findings. Prognosis of these kinds of patients rely on its early diagnosis, prompt medical and surgical treatment, and hyperbaric oxygen therapy is also accepted as a mainstay in the treatment of mucormycosis.[1]

Here, there is a evidenced-based Similar study conducted by Werthman-Ehrenretach (2021), studied a case of 33-year-old woman with rhino orbital compartment syndrome and the patient came with the chief complications of ophthalmoplegia, fixed eye, hypertension, and vomiting. The patient underwent radiological investigation and it was found that there was a maxillary thickened mucosal. And then the surgeon planned for invasive surgery at the 25th day. However, the condition of the patient worsened and got expired in the hospital on the 26th day of admission.[8]

Further, there was another case study was found with the same condition which says about the importance of the surgical treatment for paranasal mucormycosis in Covid-19.[9] A study conducted by Saldanda *et al.* (2021) which reveals that 32-year-old woman with uncontrolled diabetes underwent the endosinus surgery and endoscopic surgery. The patients had good recovery in all aspects of health after 6 months of follow-up care after surgery; expect their vision which was found to be no improvement.[10]

As per the literatures, it is shown that the early diagnosis and effective treatment in regards to this disease are very important for better outcome of the patient.

Conclusion

It is evident that the patient is immune-compromised during post-Covid recovery period due to many reasons such as over use of steroids, etc. Hence, the risk of opportunistic infection like mucormycosis is more common among these patients. Hence, Multi-disciplinary approach is necessary to control these kinds of diseases. From this case presentation, the authors would like to conclude that the immediate management and proper follow-up of care of the patient can improve the condition.

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Findings

No specific findings.

Conflict of Interest

The authors declare that they have no conflict of interest related to the publication of this article.

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