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Case Report

Case reports of rhino-orbital mucor mycosis following dengue and typhoid, from a tertiary care institute

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ABSTRACT

Mucor mycosis is a highly invasive and progressive opportunistic infection with higher rates of morbidity and mortality. It is attributed to compromised immunity status of individuals with poor oral and nasal hygiene. It got rapidly progressed and become a visible threat to the life among the delayed diagnosed cases. Therefore, new threats and pathogenesis are required to understand the prevention and treatment of the disease. Dengue is the most common arthropod born viral disease but unfortunately no effective antiviral treatment is available till now. Two case reports were done to illustrates the pathway of Mucor mycosis in dengue and typhoid infection, admitted at Tertiary Care hospital of Jabalpur District. Data was collected through interview with the case and care taker and case file review. These were the case of rhino- orbital Mucor mycosis attributed to compromised immunity during the treatment of respective infection. The early diagnosis, prompt Treatment with necessary surgical intervention are the essential steps to slow down the disease progression as well as successful outcome.

Keywords: Mucor mycosis, Dengue fever, Delivery of health care, Fungal infection

INTRODUCTION

Parallel opportunistic infections are an avertible end of the spectrum of illness, if strict considerations are given to the proven risk factors. Mucor mycosis is an invasive fungal infection caused by fungi of the order Mucorales, and the next most common Mould pathogen after Aspergillus, leading to disease in patients with compromised immunity.[1] The infection is chronic, persisting for years. Patients can include those with uncontrolled diabetes mellitus, acquired immunodeficiency syndrome, iatrogenic immunosuppression and haematological malignancies, and those who have undergone organ transplantation; affecting skin and subcutaneous tissues, leading finally to severe disfigurement.[2]

In the current pandemic rhino-orbital Mucor mycosis emerged as a matter of concern with its rapid increase of cases with rapid spread as compared to pre-COVID era. However, other viral and bacterial illnesses must not be overlooked for the relevant factors posing the threat of developing this dreaded infection. We report two cases of rhino-orbital mucormycosis following dengue (viral) and typhoid (bacterial) fever.

CASE REPORT

A 20-year male presented with pain and swelling on the right side of the face and ear, to an ENT private practitioner and got symptomatic treatment of analgesics and antibiotics. The symptoms did not relieve and after 20 days he consulted another physician at a private clinic and being diagnosed as migraine, received treatment for the same. Yet symptoms did not relieve. Then developed headache and fever on 1st October. He visited a private hospital, where he underwent MRI brain with contrast and venography and found to have heterogenic intramedullary region and right sphenoid bone and right

temporal lobe with mucosal thickening of sphenoid sinus. Plain multidetector CT scan PNS on 4th of October revealed sphenoidal, right maxillary & bilateral ethmoid sinusitis. Two days later he was referred to a tertiary care centre. On 9th of October CT-MRI BRAIN WITH PNS/ORBIT was done and found mucosal thickening of sphenoid sinus and right posterior ethmoid, soft tissue involved right pterygopalatine and right infratemporal fossa, extraconal space of right orbit with bulky lateral rectus muscle along with right cavernous sinusitis. Here he received symptomatic treatment of antibiotics, analgesics and antifungal. He was discharged after 25 days of admission, with an advice of further treatment at ENT department of institute but he did not visit for follow up. A week later he came dengue IgG positive on 8th of November and had symptomatic t/t at home. Subsequently he developed headache, pain in right eye with diminution of vision, bleeding from right side of nose & black discharge with pain over the right side of cheek has consulted an ENT clinician at private setup. And got symptomatic t/t with analgesics, antibiotics and nasal decongestant, but symptoms didn't relieve so, he admitted at medical college Jabalpur on 27th of November. Treatment started with liposomal amphotericin B 1.5 mg/kg body wt. i/v Posaconazole 300mg, inj piptaz, antibiotics, analgesics. On 29th of November endoscopic debridement under GA was done. On 3rd of December right CWL with endoscopic debridement under GA was done. CECT brain and PNS was done on 15th of December and found post operative changes of the sinuses. He is in the hospital and getting treatment of liposomal amphotericin B 1.5 mg/kg body wt. i/v Posaconazole 300mg, inj piptaz, antibiotics, analgesics.

Another case is of a 40-year-old female found to be WIDAL positive on 20th September, 2021 at a rural area, and was prescribed antibiotics, antipyretics and PPIS. Fever continued a week later too, and she had reported pain and swelling on the right side of the face and became unable to open right eye. Ten days later, she got admitted at same private hospital and during workup, (HB1AC 12.7% and RBS 548 mg/dl), found to be diabetic. Radiological findings (CT PNS) had shown thinning of right lamina papyracea with mild thickening, heterogenicity and enhancement involving right inferior rectus, mild right peri orbital thickening with heterogeneous enhancement, suggestive of pansinusitis with fungal aetiology. She has been treated with antibiotics, NSAIDS and insulin for the diabetes. She left the hospital and got admitted on medical college, Jabalpur, two days later. Where she has been treated by antibiotics and HAI 8U and Glargine 10U.CEMRI BRAIN and PNS done ON 4th of October which showed mucosal thickening and T2 hypo tense signal involving sinuses with inflammation right infratemporal, pterygopalatine fossa and in right premaxillary soft tissue, right orbital cellulitis with soft tissue, right cavernous sinus T2 hypo intensity soft tissue, right ICA occlusion and perineural spread along with right trigeminal nerve. On 5th of October CBCT MAXILLA and MADIBLE was done which showed deviation of nasal septum to the left side nasal septum deviation and right nasal cavity density with soft tissue, radiopacification cation with air pockets with b/l maxillary sinus, demineralization and thinning of all the walls of b/l maxillary sinus and blockage of right maxillary sinus with osteomeatal complex with mucosal thickening of b/l ethmoidal sinuses. On 7th of October, she reported right ptosis of the right eye with right cheek neurosis. On the 9th of October endoscopic debridement with total maxillectomy under GA was done and got treatment of inj. piptaz 4.5mg, liposomal amphotericin B 1.5 mg/kg body wt. i/v Posaconazole 300mg od, inj glargine 8iu, low molecular weight heparin, analgesics. She has been sent home on 16 of December after the successful treatment of the Mucor mycosis.

Figure 1: Post dengue mucormycosis.

Figure 2: Post typhoid mucormycosis.

DISCUSSION

Both were the case of rhino-orbital mucor mycosis. Dengue is associated with fever of increased metabolic rate and decreased platelet counts, be an advancement of upsurge of blood sugar level and fluctuation. Our case had very high HB1AC and FBS during the time of admission and after the recovery of dengue. If blood sugar left poorly monitored, is amplified the risk of emergent grave complications and also make them susceptible for Mucor mycosis. An analogous case was

reported on 15th November in TOI at Delhi, 49-year male after 15 days of recovery from dengue with the system of sudden vision loss. A similar case of post dengue mucor mycosis was reported on 29th October 2021 at Indore, India in a 50-year-old male after recovery from dengue. Similarly, another case was reported in Jabalpur, India on 17th of October in a 42-year female who recovered from dengue after 10 days.

All the mentioned cases had Mucor mycosis afterwards dengue retrieval with uncontrolled undiagnosed diabetes. Post dengue mucormysisi is a rare impediment. Another case study of Telangana, India was reported by Afroze, Korlepara, Rao, Madala in a 50 years female with uncontrolled diabetes and asthma.[3] Another unique case reported by Sabobeh, Mushtaq, Elsotouhy, Ammar, Rashid at Doha, Qatar in a case of hepatitis C, liver cirrhosis and diabetes.[4]

It is evident that certain bacterial and viral infections decrease the phagocytic function and increased the risk of opportunistic infections like Mucor mycosis. Diabetes mellitus is responsible for altered immunological response of body to any infection. Hyperglycaemia stimulates fungal proliferation by decreased chemotaxis and phagocytic activity and also increased chances of development of opportunistic organisms in acid-rich environment.

CONCLUSION

In this case, diabetes was not diagnosed on time and was progressing continuously at the dangerous point. After the diagnosis of typhoid, she got treated by over counter drugs at local pharmacy. Which weekend her immunity and gave chance to the development of Mucor mycosis and untreated diabetes worsen the situation. Symptom of Mucor mycosis started at the home but she delayed in taking the consultation regarding her symptoms. Further at hospital she got diagnosed but became ignorant and didn't take prompt treatment. While timely and proper action could stop the further progression by timely intervention. In both the cases, none was pre-diagnosed to be diabetic or had COVID -19 illness. Patient were ignorant toward the symptoms and didn't seek medical advice on time. Further it was delay by the health care personnel by not making diagnosis on time, otherwise disease progression could be stopped by timely intervention of Antifungal drugs. After the 1st hospital stay, he didn't take complete treatment in spite of having of symptoms and didn't follow the medical instructions and was continuously visiting many private clinicians. Strict adherence to protocol can avert these complications even in critical care settings.

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