

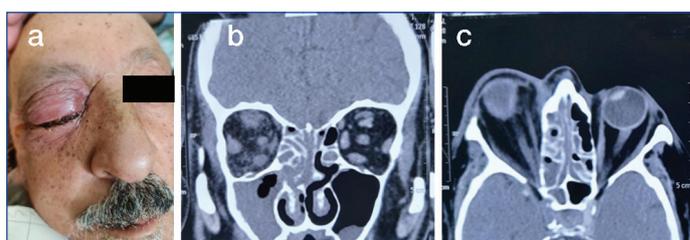
Mucormycosis in a Diabetic Patient Post COVID-19

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A 68-year-old man reported to the Department of Maxillofacial Surgery with chief complaint of blurred vision with pain in his right eye. Later, he had a fever with nasal secretion and right facial swelling, past dental history without any complications, his medical history revealed poorly controlled diabetes mellitus. Two weeks ago, the patient had been kept on medical treatment for Coronavirus Disease 2019 (COVID-19) including oxygen supplement by mask, systemic antibiotics (ceftriaxone 1 g, vitamin supplements (C, Zinc, D3) and corticosteroids (dexamethasone 8 mg) to overcome the severe pneumonia. Later on, the patient showed orbital cellulitis with disturbance of vision and nasal obstruction on the right side of his face [Table/Fig-1a]. The patient was a known poor controlled diabetic on oral hypoglycaemic medication (metformin 400 mg).

On clinical examination, the patient showed firm swelling of right eye extended to nose and maxilla with exophthalmos and ophthalmoplegia, his temperature was (37.5-38.5)°C, heart rate was 90 beats/min, blood pressure was 135/90 mm Hg, and respiration rate was 18 breaths/min; pulse oximetry showed an oxygen saturation of 90%-94%. Medical laboratory investigations revealed a random blood sugar of 265 mg/dL, HbA1C of 9.60%, White Blood Count (WBC) count of 13.7 10⁹ g/L and lymphocyte count of 0.5 10⁹ g/L. Computed Tomography (CT) findings showed contiguous extension of soft tissue into the ethmoidal air cells, the cribriform plate and maxillary sinus [Table/Fig-1b,c]. Both the clinical picture and CT findings indicated mucormycosis (zygomycosis). The patient was admitted to COVID-19 unit and was started on antifungal drug (amphotericin B liposome 50 mg/vial) as a test dose of 1 mg in 20 mL dextrose, 30 min slow i.v. with 4-6 hours monitoring, then an initial dose of slow i.v. of 0.25 mg/kg/day, later a final daily dose of 0.5 to 0.7 mg/kg increase gradually according to patient's cardiorenal status; an insulin infusion insulin glargine 25 IU/day and insulin as part 5 IU with each meal) was administered to control his diabetic condition and reduce serum glucose level to normal limits. Immune system impairment, the prescription of broad-spectrum antibiotics and corticosteroids especially in poorly controlled diabetes patients was the principle cause for this serious condition. The COVID-19 succeeded by mucormycosis (zygomycosis) have higher mortality rate. Early detection and diagnosis, antifungal therapy, good control of patient's health and aggressive surgical debridement remain key factors in the management.

There is no local information or registration centre for estimation the incidence of mucormycosis, especially, after the war against Islamic



[Table/Fig-1]: Mucormycosis (zygomycosis) in a diabetic patient post COVID-19: a) Photograph of right side of patient revealed orbital involvement and facial cellulitis; b and c) CT scan (Coronal and axial sections) revealed extension of the mucormycosis with facial bones.

State of Iraq and Syria (ISIS) in Iraq. The outbreak of COVID-19 assorted as serious viral pneumonia and higher risk of co-infections, such as pulmonary aspergillosis, candidiasis as well as mucormycosis [1]. In appreciation with COVID-19, authors have reported diabetes mellitus as a predisposing factor for mucormycosis in 36-88% of cases [2-5]. In patients with COVID-19; mucormycosis can be treated with early detection with proper management, medications and intervention including the level of blood glucose as well as prescription of corticosteroids with meticulous hygiene practice [6,7]. Attention to public health and personal hygiene reduces the risk of infection and spread of coronavirus disease and fungal diseases will decrease mortality rate.

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