

# Case Report on Mucormycotic Osteomyelitis of Maxilla

## Abstract

### Introduction

The upper jaw is formed by the maxilla, one of the basic bones of the face. It is a crucial viscerocranium structure that aids in the creation of the palate, nose, and orbit. The upper teeth are held in place by the alveolar process of the maxilla, which is vital for mastication and speaking. Because of its substantial vascular supply, maxillary necrosis is uncommon compared to mandible necrosis [1]. Maxillary necrosis can be caused by bacterial infections like osteomyelitis, viral infections like herpes zoster, or fungal infections like mucormycosis, as well as trauma, radiation, and other factors [2]. Long-term use of antibiotics or corticosteroids, on the other hand, may result in an opportunistic infection. Mucormycosis is a fungal infection that mostly affects immunocompromised persons. These fungi are widespread in many people, although the symptoms have been linked to a weakened immune system. Mucormycosis is a life-threatening illness that frequently affects immunocompromised individuals due to diabetic ketoacidosis, neutropenia, organ transplantation, and elevated blood iron levels.

### Clinical Findings

The patient have a complaint of discomfort in the upper left side of the jaw was rapid in start, dull hurting, intermittent in character, and worse on mastication. A radiating headache on the left side is also a complaint.

### Diagnostic evaluation

CRP - 12.48m/ L, Calcium 8.1mg/dl, KFT-Ser ( urea - 29mg/dl, Creatinine 0.4mg/dl, Sodium 138mmol/L, Potassium -4.3mmol/L, Albumin 2.6g/dl,)

Urine exam routine

Pus cells 1-2cells, urine albumin nil, Crystal 3-4 calcium oxalate Crystal,

2D echo was done on dated 31/5/21, MRI was done, Cardiac call was done.

## Therapeutic intervention

If not recognised and treated early, fungal osteomyelitis is more invasive than bacterial osteomyelitis. Treatment is given to the patient as a follow-up.

Debridement of necrotic tissue on a local level. Antibiotics - Tab Augmentine 625mg, Tab paracetamol 500mg, Inj T. T 0.5ml in a single dosage, Antifungal treatment, and Betadine gargle twice a day.

## Conclusion

On 04/06/2021, a 58-year-old male was hospitalised to AVBR Hospital's Oral Surgery Ward 35 after being diagnosed with Mucormycotic Osteomyelitis of the Maxilla. The patient is being counselled on how to proceed with his treatment.

**Keywords :-** Mucormycotic , Paranasal sinuses,osteomyelitis .

**Introduction:-** Osteomyelitis of maxilla is an uncommon process due to its rich vascular supply, although it can occur due to bacterial, viral, and fungal infections, especially in immunocompromised patients. Mucormycosis is caused by saprophytic and aerobic fungi *Rhizopus*, *Rhizomucor*, and *Cunninghamella* genera of the family Mucoraceae which frequently colonize in the oral/nasal mucosa. Mucormycosis is a rare opportunistic fungal infection, with acute, aggressive, and invasive nature, seen in immunocompromised/debilitated patients, especially with diabetes mellitus. The key to successful therapy is the early diagnosis of signs and symptoms of the disease, correction of the underlying medical disorder(s), and aggressive medical and surgical intervention.

## Patient identification

On 04/06/2021, a 58-year-old male patient from Nagpur was admitted to Oral Surgery Ward 35 with Mucormycotic Osteomyelitis of the Maxilla. His weight was 87 kilograms, and his height was 167 centimetres.

**Present Medical History** – A 58 years old, Male, was admitted to Oral surgery ward, AVBRH with chief complaints of difficulties in mastication for about one week, radiating headache on left side, loss of appetite (15 days), and weight loss. Mucormycotic Osteomyelitis of the Maxilla has been diagnosed. His haemoglobin level at the time of admission is

**Past Medical History** - The patient has had a history of diabetic Mellitus for around 4 years. He also has a history of tooth extraction 4 years ago. Also, he suffered Covid -19 infection, for which he was taken to a private hospital in Nagpur on April 20, 2021, where he was treated with Inj. Remdesivir, Inj. Prednisolone, Tab Acetazolamide, Tab Ivermectin.

**Family history** - The patient has a family of five members. He was diagnosed with Mucormycotic Osteomyelitis of the Maxilla, although his parents had no aberrant genetic

background. The parents were married in a non-consanguineous way. Except for the patient who is in the hospital, the other members of the family have no concerns about their health.

### Past intervention and outcome

Mucormycosis was suspected as the cause of the patient's pain on the upper left side of the maxilla. Further analysis revealed that the patient had Mucormycotic Osteomyelitis of the Maxilla, which was subsequently identified by a histological report dated 05/06/21. On admission, the patient's blood sugar level was 250, at which time 2 units of insulin were administered. In addition, a stat dose of inj Tetanus Toxoid 0.5ml was administered.

### Clinical finding

The patient complained of discomfort on the upper left side of his jaw, which was rapid in start, dull hurting, intermittent in character, and worse on mastication, He also described lack of appetite, weight loss, and a radiating headache on the left side.

### Physical examination

On a comprehensive examination from head to foot, it was discovered that the patient had complained of pain over the upper left jaw and difficulty masticating for one week. The patient weighed 87 kg and stood 167 centimetres tall. The GA patient is no longer on covid. Temperature is 98°F, pulse is 84 beats per minute, respiration is 16 beats per minute, GC is good, CNS is conscious. Blood pressure is 112/70 millimetres of mercury. It's common to have bowel and bladder habits. A patient is of average build and is considerably fat. During the physical examination, the patient's face was expressionless. He was well-informed on the day and location, and he was cooperative.

### Dignostic assessment

He had all of his blood tests done, as well as a 2D Echo with an EF of 51% on May 31, an MRI on June 2, a cardiac call, and a random blood sugar level of 350 mg/dl. CRP 12.48 mg/dl, calcium 8.1 mg/dl, albumin 2.6 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, total billurubin 0.4 mg/dl, Sr Creatinine -0.4mg/dl, Urea -29mg/dl Sodium: 138 mmol/L, potassium: 4.3 mmol/L, haemoglobin: 10 gm%

### Management

#### Medical management

mucormycosis is treated with three important measures: 1) control of predisposing variables, 2) antifungal medication, and 3) surgical surgery. The patient's diabetic mellitus was closely watched by the physician, who prescribed antifungal medication (amphotericineB) and surgical intervention of the affected maxilla, which included the removal of all necrotic bone and soft tissue. It takes a detailed clinical radiographic examination, as well

as histological confirmation backed by specific stains, to diagnose mucormycosis early, allowing for early and effective therapy.

### **Surgical management**

No surgical treatment is carried out. There's nothing significant here.

### **Nursing management**

The patient's medical history, both previous and present, was gathered. In addition, past treatment information was gathered. The results of the physical examination were evaluated.

### **Nursing diagnosis**

Acute discomfort in the maxilla due to tissue damage caused by a mucormycotic infection.

<b>Nursing intervention</b>	<b>Rationale</b>
1)Every two hours, the patient should be assessed to determine the source of his discomfort and to measure the pain scale.	1)To determine the severity of pain.
2)Create a quiet and relaxing atmosphere. Give the Betadine gargle according to the doctor's instructions.	2)To make the patient feel at ease
3)As directed by doctors, provide anti-inflammatory and analgesic medications.	3)In order to lower the risk of infection to lessen the discomfort

### **Follow up care**

In case of emergency, the patient is encouraged to attend the hospital once a month. Tab Augmentine 625mg, Tab Paracetamols 500mg, Tab Pan 40mg, and Inj Tetanus Toxoid 0.5ml have been prescribed for him.

Betadine gargle, breathing exercises, and a **diabetic** diet were also recommended to the patient.

### **Discussion**

We spoke about a case report on mucormycotic osteomyelitis of the maxilla in this article. Mucormycotic infection is an opportunistic fungus caused by a group of saprophytic fungi. These creatures' spores are dispersed into the air by rotting matter. Inhalation is the primary method of infection. Uncontrolled diabetes mellitus, lymphomas leukaemia, renal failure, organ transplantation, long-term corticosteroid use, immunosuppressive medication, and AIDS are all risk conditions for mucormycotic infection. Iron has a vital function in the progression of mucormycosis.

## Conclusion

Osteomyelitis is the earliest documented illness, however mucormycotic Osteomyelitis is uncommon. Patients with diabetes and immunosuppression are more likely to develop this condition. It is important to take care in obtaining an accurate diagnosis through investigations such as histological and radiographic examinations. These investigations have confirmed whether Osteomyelitis is a fungal infection or not. This mucormycotic therapy is now being administered to my patient. In addition, additional medical care should be sought.

Consent Disclaimer:

We have added the Consent Disclaimer in the revised paper. The revised paper is attached herewith this mail for your kind perusal. Kindly check the revised paper

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